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STATISTICS OF CRIME IN MASSACHUSETTS.

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In the introduction to his work upon the American Commonwealth Prof. Bryce refers to "the special skill and knowledge needed to distill from rows of figures the refined spirit of instruction." We are reminded of this apt suggestion when we see widely differing opinions seeking support from the same statistics. It is not surprising that uninterested persons very often, to quote a great English satirist, reach a point where they look upon all statistical information as merely "little rivers of tabular statements periodically flowing into the howling ocean of tabular statements which no diver ever got to any depth in and came up sane." Despite this contemptuous estimate, however, every thoughtful person admits today that statistics are fraught with meaning, and make the basis for nearly all reforms. Disputes as to their significance do not lessen their value, for out of the shock of controversy comes the spark of truth.

I remember that the general subject of statistics of crime in this state has been ably treated by two eminent authorities,

Carroll D. Wright and William T. Harris; and that very recently the subject has been discussed with keen intelligence in the *Forum* magazine. If your Secretary had not assured me that this Association expects from me an explanation of the statistics, more than a comparison of the present time with former generations, I should not venture to consider a topic that has been so thoroughly canvassed. I leave out of this paper any extended discussion of prison systems. I omit also any comparison with the statistics of Great Britain; until we can send some of our criminals to another community we shall not be in a condition to make a comparison with her upon equal terms. English penologists have claimed that transportation, which was adopted in 1787 and abandoned in 1840, did not reduce crime. A parliamentary committee, in 1838, reported that when London was emptied of its thieves, by transportation to New South Wales, a new crop of criminals immediately appeared; the criminals were banished, but the crime remained. Her modern statesmen do not share in this belief, however, for they have returned to the old scheme of transportation, under the new name of assisted emigration. Another reason why comparison with Great Britain cannot fairly be made is that in many of her communities the laws are not enforced with any approach to the rigor that prevails in this state. The warden of the central prison in Toronto, who certainly would not be prejudiced against Great Britain, bears witness to this fact in his testimony given before the Ontario Commission of 1889. It must be admitted, however, that Great Britain has a superior prison system; and once the prisoner is committed, he is subjected to a just and wholesome discipline.

Neither can we with fairness compare the statistics of Massachusetts with those of other states. Comparison with an interior state would be worthless, and there is no other seaboard community that stands in the same position, as to immigration, that is occupied by Massachusetts. New York comes the nearest to us in this respect, but I have been in-

formed that a much larger percentage of the immigrants who land at New York go to the west than is the case with those who disembark at Boston. It is true that these immigrants do not bring with them any great amount of serious crime, but they have not been trained to observe social regulations equal to the standard set up by our industrious legislature, that has, in the words of an ex-governor, made the manufacture of offences a state industry. The introduction of such an element into our population cannot do otherwise than help to swell the ranks of prisoners committed for offences against public order.

In the limited scope of this paper very little attention can be paid to the statistics of long ago, and, if space permitted, it would not be profitable to quote them to any extent, because they must, in the nature of things, be exceedingly unreliable.

The earliest attempt to gather official statistics of crime was in 1832, when it was made the duty of the attorney-general to make a report of criminal cases to the General Court. This report related only to part of the prosecutions, and does not form a reliable source from which to obtain figures for a comparison with the present day. The office of attorney-general was abolished in 1843, and from that time to 1849, when the office was re-established, this report was made by the secretary of the Commonwealth. In 1840 it was made the duty of the secretary to receive and compile, for the use of the legislature, the returns of commitments to the jails and houses of correction; this last named act seems to have been defective, for in 1857 it was enacted that a penalty should be imposed upon any officer who failed to make the returns required by the act of 1840. In April, 1863, the board of state charities was established; it was made the duty of this commission to supervise and inspect all correctional and charitable institutions, and to make an annual report concerning them. This was the nearest approach to a systematic and comprehensive statement of the commitments to prisons that had then been made in the state. The work of prepar-

ing the figures was all under the able direction of Mr. Sanborn, and returns were presented according to an act drawn by him in 1864. In 1870 three commissioners of prisons were appointed to supervise the jails and houses of correction, and again the statistics were divided. The report of this board related at first only to the county prisons, and, although it afterwards included the Reformatory Prison for Women, it never referred to the State Prison. It was necessary to consult their report and the report of the last-named institution to find the whole number of commitments. In 1879 the present board of Commissioners of prisons was established. The first secretary was Mr. Spalding, and I quote from the first Commissioners' Report, that it was my duty to prepare, when I say that he "succeeded under great difficulties in establishing a system of securing prison and court returns for the preparation of reliable criminal statistics."

This long preliminary statement is necessary to explain the great lack of uniformity in the statistics,—a lack which makes perfect comparison impossible. We have made some improvement, but the difficulties in the way of a clear statement are not entirely removed, for the law relating to the distribution of public documents makes it necessary to present the report of the commissioners in separate parts, one relating to the State Prison, another to the Reformatory Prison for Women, a third to the Massachusetts Reformatory, and a fourth to the jails and houses of correction and criminal matters in general. This arrangement, which is adopted for good reasons, is somewhat confusing to one who is not familiar with it. It must be borne in mind that the report is designed to give to the General Court information upon all prison and criminal subjects; to furnish, perhaps, a reason for the passage of new laws or the repeal of old ones. It contains so many things besides the statistics that a more extended examination is required to ascertain the state of criminality than would suffice for that purpose if it were

devoted to figures upon that subject alone. The statistics of crime are presented in the report in four classes. The figures of general interest to the statistician are to be found in the fourth part of the report, and the student of social conditions should disregard the other parts, which deal only with particular institutions. The reports in detail upon each county prison, and the financial statement showing the expense of maintenance, the receipts for labor, etc., must also be passed over by such a student. The statistics that should be studied are, *first*, the tables showing the number of commitments to the various institutions, setting forth the offences and sentences in full, and giving as nearly as can be ascertained the ages, birthplaces, recommitments, parentage, education, conjugal condition, etc., which tables are compiled from returns made at regular intervals by officers in charge of the prisons; *second*, the statements compiled from returns of arrests that were first presented in 1882 in accordance with an act passed in that year requiring the police officers to make reports to the commissioners; and *third*, the tabular statements showing the results of criminal prosecutions.

It is to be noticed here that the number of commitments is greatly in excess of the number of criminals, for it is impossible to determine exactly how many times an offender is committed to prison during the year. Although a large number of the prisoners are recognized as recommitments, all the persons who come under that head are not identified, because the officers of one county cannot know the old offenders of another county. Reliable knowledge upon this point can only be secured by adopting some efficient and uniform method of registering and identifying prisoners. The adoption of such a system would give correct information as to identity, and, besides its value in this respect, it would enable the courts to deal more effectively with a certain class of offenders. The returns of arrests are received monthly from the chiefs of police or the city marshals in the towns that maintain such officers; in all other cases an annual return only is

required. The facts as to criminal cases are presented to the commissioners in a yearly report from the courts.

The statutory division of crimes in Massachusetts is not observed in presenting the statistics, except in relation to offences against person and property. The reports include three classes of crimes, — the first being offences against the person, the second against property; in the third class, under the head of offences against public order, etc., are included offences against the currency, against public justice, against the public peace, against chastity, morality, etc., against the public health, and against public policy, etc. A few offences are not classified in the statutes; these are included in the tabulation under one of the three divisions, according to the nature of the crime. The enumeration of these classes of crime proves how closely the law makers have analyzed the possible transgressions of the citizens; and a detailed list of the particular crimes would show a large number of offences that are peculiar to the criminal code of Massachusetts. In one table in the report all the statutory offences committed in the year are printed, but sixty-one different titles, invented by the makers of complaints, have been included under some other head; the only difference is in phraseology, but it illustrates the comprehensive nature of the offences. This fact furnishes another reason why it is impracticable and useless to make a comparison with the earlier years of the century; we now have upon our statute books nearly twice as many punishable offences as were named in the laws fifty years ago. Furthermore, the machinery for the execution of the law has been so improved, and attention is so readily attracted to the slightest misdemeanor, that, whereas in former years many trifling violations of the law were allowed to go unnoticed, scarcely a single act that can be tortured into an offence is permitted to go unpunished today. As an instance of the ingenuity of the persons who make complaints in court, I mention the case of the person who was complained of last year for "disobeying a police-

man." With what amazement a descendant of the "tea spillers" must regard such a prosecution! It only shows how reckless the administration of the law has become when such a complaint can be formulated and entertained by a court. If we are to be prosecuted for disobeying a policeman, how long may we hope to escape punishment for being disrespectful to a janitor?

We have now reached a point where the legislature has provided for uniform statistics, but we yet encounter some difficulties in securing correct returns. One clerk of the court under the head of "pleas" puts "not arraigned," forgetting to tell us how a person who was not arraigned could be expected to make any plea. Another clerk returns a case as "offence not charged," and follows it with the quite unnecessary statement that no indictment was found. These are only types of other inaccuracies that we are obliged to correct before the figures can be tabulated.

Although we cannot make full comparisons with the years prior to the adoption of a system of uniform statistics, a sufficiently close comparison for all practical purposes can be made for the last ten years, during which period the same method of collecting the returns has been observed, and substantially the same conditions of society have prevailed.

Comparing the year 1890 with that ending September 30, 1881, we find that the whole number of commitments increased enormously, the figures having risen in ten years from 17,062 to 33,290. The statement of this increase is startling, but it would be unwise to form a conclusion without taking into account the nature of the offences wherein there was an increase. Examining the offences by classes, we find in those against the person that the number of assaults rose from 1589 in the first year to 1732 in the last year; this was a large increase, but not so great as it would have been if it were not easier for the policeman to obtain a conviction for drunkenness than for assault. For manslaughter the commitments were the same, although the number varied greatly in the

intervening years. Murder and accessory with four cases in 1881 had only two in 1890, and only one in either of the two years immediately preceding. We perhaps may be less disturbed by the increase in commitments for "walking on the railroad," "standing on the sidewalk," "stealing a ride," "tramping," etc., if, to paraphrase the observation of the brilliant Frenchman, the murderers will help us to abolish capital punishment by reducing the number of their crimes. Robbery, a crime which is put into the first class because it has an element of danger to the person, although it is quite as much a crime against property, increased from eleven to eighteen, a very large percentage; but the number of robbers who were caught was comparatively small in either year. Leaving out the assaults which (with the exception of a few perpetrated with the intent to commit felony) are twin brothers to drunkenness, there were actually fewer commitments for offences against the person in Massachusetts in 1890 than in 1881.

In offences against property there was, to begin with, a falling off in the cases of arson from six to two. We can endure the greater activity of the police in committing drunkards and vagrants, even if it does give us a bad reputation, if our lives and our dwellings are to be safer. Breaking and entering has increased. Relatively, the burglars are few in number, but their power to terrify the community exceeds that of all other criminals, and it is a serious matter when burglary shows the slightest increase. It should be remembered, however, that not all these cases of breaking and entering amount to burglary; some of them are the acts of youthful thieves who break and enter a shop, and whose crimes do not approach the character of an offence against the person, as does burglary. These young offenders, perhaps, need not be sent to prison for long terms, but for the scoundrel who enters a house at midnight prepared to do murder, if he is molested while committing another crime, there is no punishment too severe. If his character as a criminal of this

kind is fully established, and his crime is clearly proven, he should be committed to prison for an indefinite period; he should never be permitted to go at large into the community again until he becomes incapable, either by a complete reform or by old age, of renewing his offences. Embezzlement has increased from forty-two cases to seventy-two, but all embezzlements in the tables do not refer to the acts of cashiers or others holding positions of trust and responsibility; some of them would better be described as petty larcenies. We had fifty-seven frauds in the first year and nearly double the number in 1890. All the persons charged with fraud did not attempt to cheat a bank or to negotiate a loan; some of them succeeded only in obtaining a week's board without paying for it. Larceny is the most popular crime against property; nothing seems to check the industry of the thief; no punishment that human ingenuity has yet devised seems to affect the criminals who make larceny a trade. Rigorous treatment in prison, branding, hanging even, has not seemed to have much deterring influence upon this class of offenders. Receiving stolen goods shows a comparative increase, and all other offences against property a decrease.

In crimes against public order, etc., commitments for lewdness and kindred offences increased in number, but this is doubtless owing to the more vigorous execution of the law rather than to any other cause. It may be said in parentheses that the best analysis we can make, and the fairest comparison possible, shows that crime amongst women in Massachusetts has decreased very materially in the last few years. This condition has been attributed partly to the excellent methods of the reformatory prison at Sherborn, but the main reason for it will, unquestionably, be found in the fact that opportunities for the employment of women are constantly improving. The offence of disturbing the peace has a smaller number in 1890 than in 1881, but the decrease is due to the same cause that kept down the number of assaults, it being easier for the police officers to complain of a man for drunkenness than to

make any other charge. Counterfeiting has almost disappeared from the list, but forgery shows about the same ratio of increase as embezzlement.

For violating the liquor laws 120 persons were committed in 1881, and 506 in 1890. This enormous increase may not be caused by any greater criminality in the dealers, but by the better enforcement of the statutes and the fact that there is more law to violate. Polygamy, with ten cases in 1881, had only eight in 1890. The same number of tramps appeared in 1890 as in 1881, but there were more vagabonds and vagrants. To compare these offences they should be added together, since the statutory distinction between them is not always observed by the courts. In other offences of the third class there was a considerable increase.

From the commitments of the last ten years it appears that serious crime in Massachusetts has diminished. I have not filled this paper with detailed statistics of offences nor percentages of crime, but a brief summary of the figures as given by me in an article in the Boston *Transcript* last year may be readily borne in mind, and for that reason I reproduce them here. The population of Massachusetts in ten years increased nearly twenty-six per cent. The commitments for offences against the person including assaults, which are usually the result of drunkenness, increased eight per cent; in offences against property the increase was fourteen per cent. The proportionate decrease in crimes against property is the more striking when we remember that the population of Massachusetts has in recent years been going rapidly to the cities. While it is true that startling and atrocious crimes are not relatively more frequent in crowded communities than in the sparcely-settled regions, it is doubtless the fact that offences due to idleness, to poverty, and to weak wills are oftener found in the cities than in the country.

In studying the statistics we should remember that many persons convicted of minor offences are punished by fine, and pay the penalty without going to prison; they do not appear

in the table of commitments, and no exact comparison of the number of offenders can be made without taking into consideration all the criminal prosecutions. We will, therefore, briefly examine the court returns to ascertain if they confirm the conclusion that has been reached by a study of the prison figures. This review cannot cover the entire ten years, because in 1881 the returns from the lower courts were not tabulated. We may take, however, for comparison the last five years, in which uniform statistics have been received, and the same method of presenting them has been followed in the reports.

During the year ending September 30, 1886, the number of cases begun in the superior courts was 4946; in the year ending September 30, 1890, it was 4625. This decrease indicates clearly, as does the falling off in the commitments, a lessening of the serious crimes. In 1886 there were 2246 sentences imposed: in 1890 there were only 2158. If the decrease appeared only in the offences of the third class, it might be attributed to a chane ign practice by which more cases would be disposed of in the lower courts; but, as there were fewer cases in 1890 than in 1886 in each of the three classes, it is a fair inference that the smaller number in the later year represents a real decline in serious criminality. In 1886 there were brought before the police, municipal, and district courts and trial justices 62,852 cases; in 1890 the number was 81,255. The increase of 18,403 is largely made up by the additional prosecutions for drunkenness, which rose from 33,927 to 51,026: leaving this offence out of the question there was, in proportion to the growth in population, a substantial decrease in the amount of criminal business. The arrests, for the same period of five years, show an increase from 61,340 to 80,844. The same offence, that caused the great addition to the number of cases in the lower courts, is almost wholly responsible for the larger number of arrests; any increase, other than for drunkenness, may safely be ascribed to the greater zeal of the officials.

From an examination of the statistics what lessons can be learned? There is not space remaining to permit more than a brief reference to some of the conclusions that may be drawn from the study of the figures.

The increase in the cases of drunkenness has been large, but in criminality there has been a relative decrease. Although we have not retrograded as rapidly as unfriendly critics have declared, we must confess that we have not progressed as far as we ought to have done in reducing crime under our high state of civilization. With a legislature meeting annually for the improvement of the laws, we should have reached a much higher degree of efficiency in dealing with criminals than now marks our methods. But the statesmanship that multiplies offences, and at the same time crowds into a single institution all classes and conditions of prisoners, putting the drunkard with the thief, the vagrant with the burglar, will surely make criminals.

In considering the changes that seem desirable it appears to me that there should be more uniformity of punishment; this can only be obtained by adopting the indeterminate sentence for all serious crimes. It would not be wise, under the present plan of term sentences, to take from the judges the discretion they now have in the punishment of certain offences. Breaking and entering, for example, is an offence that varies to such an extent, in its degrees of criminality, that no inflexible rule for its punishment could with justice be prescribed. The only remedy, then, for the inequality of sentences is to provide that a man shall be sent to prison until he appears, under proper regulations, to be fit to be trusted with his liberty.

There should be longer sentences for vagrancy; the tramps, vagabonds, and vagrants that infest certain communities in the summer time should not be allowed their liberty during the good months in the year, and then be maintained at the public expense during the winter, when they are compelled to abandon their predatory habits. If they were put to hard

labor in a county jail or workhouse, during the entire twelve months, it might have the effect of inducing some of them to avoid the prison after a single term.

Another suggestion is that drunkards should not be sent to prison unless they commit some other offence. Dr. Keeley claims that he can cure drunkenness. If he can do so, it is a disease; if it is a disease, it is not a crime; and if it is not a crime, it should not be punished by imprisonment in an institution designed for criminals. The Massachusetts legislature approved this principle a few years ago, when an act was passed to establish a hospital for dipsomaniacs. Sending a man to prison for drunkenness because he has committed an assault, or is a disturber of the peace, is an absurdity, differing in degree only from what would appear if a drunken murderer were punished for drunkenness instead of for murder.

One other impressive lesson is that we send too many young men to prison. Boys whose offences indicate in many instances more a mischievous spirit than a criminal character are sent, without any sufficient preliminary investigation, to become the associates of persons hardened to a criminal life. The effect of such a practice must inevitably be injurious to the last degree. The reformer who desires an improvement in the criminal law need not go beyond the probation work to find a mission.

The treatment of prisoners and the management of prisons generally has in recent years received marked attention in public discussions. The considerable increase in the cases of drunkenness, of vagrancy, and such offences has been attributed to a want of proper supervision, and the lack of discipline in the penal institutions. Persons wholly unfamiliar with the subject have quickly settled, on paper, the most difficult problems that confront the prison officers. Editors, ignorant of the statutes even, have freely given instructions in the administration of the law. It may be true that in some respects the management of the prisons could be improved.

It is very likely that too much money is spent upon some of our institutions, and that part of the effort now put forth for the reformation of prisoners is misdirected. There is no doubt that in some institutions the discipline is not sufficiently strict; but when you seek the primal cause of our rapidly-filling prisons you will find it in the absurdities of the statutes, and in the carelessness of the courts.

An abstract of the statistics referred to in the preceding paper is presented below for the convenience of persons who cannot readily refer to the Commissioners' report. Since the paper was presented, the annual report for 1891 has been submitted to the General Court, and the figures for that year are included.

COMMITMENTS TO PRISONS.

1.—Against the Person.

Offences.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Assault	1,589	1,590	1,560	1,719	1,754	1,641	1,537	1,636	1,799	1,732	1,692
Manslaughter	10	11	7	8	13	12	10	11	8	10	12
Murder and accessory	4	5	3	3	3	2	6	1	1	2	4
Rape	3	7	3	3	6	3	6	4	7	7	6
Robbery	11	17	18	32	24	31	21	19	27	18	31
Miscellaneous	69	61	69	68	79	82	71	83	46	52	54
Total	1,686	1,691	1,660	1,833	1,879	1,771	1,651	1,754	1,888	1,821	1,799

2.—Against Property.

Arson	6	4	17	11	10	11	7	3	7	2	1
Breaking and entering	186	189	169	212	271	231	241	270	314	267	319
Embezzlement	42	48	53	44	54	43	66	64	65	72	52
Fraud	57	64	52	85	92	94	75	95	116	108	98
Larceny	1,573	1,644	1,665	1,871	2,031	1,671	1,647	1,721	1,893	1,754	1,910
Receiving stolen goods	29	37	43	23	35	40	38	44	39	39	48
Miscellaneous	330	297	353	391	425	358	375	294	345	305	334
Total	2,223	2,283	2,352	2,637	2,918	2,448	2,449	2,491	2,779	2,547	2,762

3.—Against Public Order, Etc.

Abortion	1	4	1	1	1	...	3	1	1	2	1
Adultery	37	48	57	68	63	81	61	68	77	79	62
Common night-walker	74	107	147	125	139	158	99	76	118	115	123
Disturbing the peace	582	526	511	555	527	432	361	365	451	390	597
Drunkenness	10,930	16,769	17,854	19,564	18,701	17,981	19,952	23,407	25,879	25,68	19,794*
Forgery	15	35	17	29	41	30	28	23	32	27	13
Fornication	85	102	87	87	77	103	172	170	159	133	147
Idle and disorderly	148	122	111	166	237	242	188	139	218	176	266
Lewd cohabitation	3	21	11	6	11	9	11	19	26	16	19
Lewdness	37	36	43	43	48	55	30	59	65	72	87
Liquor laws, violating	120	121	106	164	134	260	290	369	485	506	398
Polygamy	10	11	14	7	9	7	12	10	9	8	11
Tramps	211	168	203	183	285	303	177	214	247	212	**
Vagabonds and vagrants	413	384	554	751	902	878	768	714	824	704	800
Miscellaneous	487	437	397	520	679	700	573	804	836	796	916
Total	13,153	18,891	20,113	22,269	21,854	21,239	22,725	26,438	29,427	28,922	23,234

Recapitulation.

1.—Against the person	1,686	1,691	1,660	1,833	1,879	1,771	1,651	1,754	1,888	1,821	1,799
2.—Against property	2,223	2,283	2,352	2,637	2,918	2,448	2,449	2,491	2,779	2,547	2,762
3.—Against public order, etc	13,153	18,891	20,113	22,269	21.854	21,239	22,725	26,438	29,427	28,922	23,234
Total	17,062	22,865	24,125	26,739	26,651	25,458	26,825	30,683	34,094	33,290	27,795

* The commitments for drunkenness were reduced by the change in the law for the punishment of that offence.

** In this year the tramps are counted with the vagabonds and vagrants.

NUMBER OF CASES BEGUN IN THE SUPERIOR COURT.

Offences.	Years.					
	1886.	1887.	1888.	1889.	1890.	1891.
1.—Against the person	834	863	816	823	786	787
2.—Against property	1,431	1,366	1,473	1,514	1,389	1,396
3.—Against public order, etc.	2,681	2,634	2,442	2,531	2,450	2,181
Total	4,946	4,863	4,731	4,868	4,625	4,364

NUMBER OF SENTENCES IMPOSED IN THE SUPERIOR COURT.

Offences.	Years.					
	1886.	1887.	1888.	1889.	1890.	1891.
1.—Against the person	368	327	315	328	287	338
2.—Against property	628	631	635	706	702	686
3.—Against public order, etc.	1,250	1,193	1,103	1,193	1,169	949
Total	2,246	2,151	2,053	2,227	2,158	1,973

NUMBER OF CASES BEGUN IN THE MUNICIPAL, POLICE, AND DISTRICT COURTS, AND BEFORE TRIAL JUSTICES IN EACH COUNTY.

Counties.	1886.	1887.	1888.	1889.	1890.	1891.
Barnstable	130	183	213	187	134	141
Berkshire	1,846	1,937	1,753	1,825	1,986	1,833
Bristol	4,685	4,329	4,659	5,478	5,511	4,954
Dukes County	14	36	39	36	42	49
Essex	6,904	7,619	9,017	9,139	9,433	10,030
Franklin	386	467	432	444	420	467
Hampden	3,673	3,532	4,323	4,709	4,417	3,757
Hampshire	563	600	572	697	718	551
Middlesex	9,291	9,659	10,502	11,391	11,630	12,259
Nantucket	22	17	49	20	41	18
Norfolk	1,985	2,058	2,477	2,373	2,606	2,402
Plymouth	1,701	1,635	1,547	1,571	1,564	1,447
Suffolk	26,186	28,815	32,426	38,412	35,941	32,945
Worcester	5,466	6,976	7,225	7,270	6,812	6,700
Total	62,852	67,863	75,234	83,552	81,255	77,553

ARRESTS FOR DRUNKENNESS AND FOR OTHER OFFENCES.

Years.	Drunkenness.			Other Offences.			Aggregates.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
1886	30,741	4,661	35,402	22,735	3,203	25,938	53,476	7,864	61,340
1887	36,495	4,961	41,456	23,258	2,977	26,235	59,753	7,938	67,691
1888	42,481	5,672	48,153	24,783	3,301	28,084	67,264	8,973	76,237
1889	47,206	5,952	53,158	26,353	3,605	29,958	73,559	9,557	83,116
1890	46,932	5,882	52,814	24,821	3,209	28,030	71,753	9,091	80,844
1891	49,969	6,543	56,512	27,327	3,275	30,602	77,296	9,818	87,114

DEVELOPMENT OF STATISTICS OF RELIGIONS.

Condensed from an Article by M. FOURNIER DE FLAIX, and translated by ALICE R. JACKSON.

The study of the different religions of the world is a characteristic of the nineteenth century. This study occupies itself not only with religions which were formerly professed, but with those which are today professed by any portion of the human race. While all religions are more or less connected, this present sketch, however, deals only with those which are the existing religions of humanity.

The interest of the question, and the permanency of religions, should be sufficient to attract the attention of statisticians, and to invite them to give religion the place it merits in their works. Moreover, religious statistics already exist and need only to be improved. Many countries already possess them, notably, Germany, Austria, Italy, and English India. It is necessary, however, to impress the countries in which they do not exist, or in which they exist in a very imperfect state, with the great value of comparative religious statistics.

The positive knowledge of the great religions of humanity is recent, belonging rather to the second than to the first half of our century. It is therefore not surprising that the statistics upon the subject are relatively imperfect. It was not until the close of the sixteenth century that Europe knew much of the existence of other religions than Mohammedanism and Judaism. Nothing was known of their extent or sphere of action. Asia herself in great part was yet unknown.

Rabelais, Montaigne, and Bacon, however, held enlarged views of religions. These views are more pronounced with Machiavelli and, above all, with Bodin. Bodin was not only a politician and economist and publicist; he was also a savant. His different works, *La république*, *Le methodus*, *L'Heptaplomeros*, *Le theatrum mundi*, and even *La démonomanie des sorciers*, contained about all that was known

or could be known then about the religions of Chaldea, Assyria, Persia, Egypt, and of Mohammedanism. Bodin knew comparatively nothing of the religions of India and China.

Under the double influence of the Renaissance on the one side, and of the discoveries and tales of travellers and missionaries in Asia and the two Americas on the other, remarkable progress was made in the seventeenth century in discovery and knowledge of the religions of Asia; but still this knowledge was most fragmentary. The Jesuit missionaries gave some notions, for the most part erroneous, of Pegu, Siam, China, and Japan, but nothing as yet of India. The first publications also, on geography and the different religions, were extremely imperfect. It is, however, interesting to look over the works of Sansovino (1611), *Le gouvernement et administration des états et des républiques.* But Sansovino gives no place to religion, although he devotes several chapters to Turkey, Persia, and Egypt. And Davity, in his work *états et empires du monde* (1626), which gives the origin of all religions which had existed in the world down to that time, includes religion among the forces of each state. It is treated as such for England, Scotland, Ireland, France, Spain, Portugal, China, Japan, Pegu, Turkey, the Portes of Calcutta and Narsinge, the empire of the priest Jean Monomotapa, the kingdoms of Congo and Morocco. For European countries Davity gives no figures for comparing the different religions or sects. He gives statistics only concerning the parishes and revenues of the churches. He had only very vague and inexact ideas concerning India and Africa, but his book contains some curious information, gathered from the missionaries: (1) As to the progress of Christianity in the Portuguese colonies of Asia; (2) concerning the religions of Indo-China, and the religious orders of Siam and Cambodia; (3) concerning the four religious orders of China; and (4) concerning the extent and importance of Mohammedanism. The work of Davity holds, therefore, in the history of the statistics of religion an honorable

place. It is remarkable that Davity had learned at that time that there existed four religions in China.

In the second edition (1660) of Davity's book, by Recolles, more exact information was given in particular concerning China. Mention is made of Confucius, Fotoqui, and Scinto. This is perhaps the earliest mention relating to Buddhism and the primitive religion of Japan.

The work of Alexander Ross (1666), *Les religions du monde*, although more special than that of Davity, borrowed much from him. All religions are passed successively in review, but without order, either chronological or geographical. The same chapter treats of the religions of Africa, America, and Armenia. There is no information concerning India, but some details are given about the monks of Siam and Pegu, and the three great philosophers of China.

To this epoch belongs the book of Palladius (London, 1668), *De gentibus Indiae et Brahmanibus*. In this work Palladius collects all references to the Brahmans from Greek and Roman historians and geographers. Probably Descartes, Pascal, Bossuet, Leibnitz, Newton, and Spinoza knew no more than this of the Brahmans. A few vague and general ideas were circulating in Europe concerning them, but no real information was given until the end of the eighteenth century. The dictionary of Moreri (1672), however, contained some reliable information with regard to Sakia, the great prophet of Japan, born 1029 B.C., in the island of Ceylon. In the article on *Religions*, countries are classed as Christian, Mussulman, or idolatrous.

The eighteenth century opened with several important works from different points of view, the *Political Arithmetic* of W. Petty (1698); the dictionaries of D'Herbelot and Bayle (1698–1697). The work of Petty, admirable in treatment of the method of collecting and comparing facts, contains no application of this method to religious facts. The dictionary of D'Herbelot makes brief mention of the philosophy of the Hindoos, according to which Brahm is the

first of three beings whom God made, and by whom, according to their doctrine, the world was made. This Brahm gave to the Hindoos the book which they call Bed, or Beth. This is one of the earliest references to the Vedas.

Bayle's dictionary shows remarkable progress. In the article *Brahmans* he clearly distinguishes the Brahmans of India from the Brahmins of China; and his information concerning Buddha and Buddhist doctrines, notably that of the Karma, is accurate. He gleaned his ideas of Buddhism from the narratives of La Loubère and Father Tachard. He established a very curious comparison between the extent of Christianity and Mohammedanism. He admitted that the extent of Mohammedanism was greater, and though he was deceived in this particular, the comparison is not less apt.

The great historical atlas of Gueudeville belongs to this period (Amsterdam, 1705). This is a collection, in the style of the atlas of Lesage and Kruse, of interesting dissertations and charts. Religion is mentioned in the chart of each country but without figures.

Up to the time of the publication of the works of D'Anquetil-Duperron (1771 and 1798) and the establishment of the Asiatic Society of Calcutta (1783), little progress was made in the knowledge of the religions of the extreme Orient. The memoires of Fréret, and even those of Guignes, inserted in the works of the Academy of Inscriptions and Belles-Lettres, although throwing some light upon the subject, were still insufficient to convey any accurate idea to the world of letters. Fréret still confused Brahmanism and Buddhism under the common name of the religion of the Hindoos. Guignes even exaggerated this confusion. He asserted, as did D'Herbelot, that the Brahmans had taught Confucius. Knowing this, it is easy to account for some of the articles by Voltaire and the encyclopædists upon religions.

The works of De la Croix, Dupuis, and Dulaure, although specialists in the study of religions, still leave much to be desired as concerns any actual knowledge of the religions of Asia.

That there have been and are great religions which have a powerful influence upon mankind De la Croix, Dupuis, and Dulaure all agree, and their works are evidence that in the eighteenth century religions were reckoned as a distinct element of civilization. But the scientific resources of their age did not permit an exact knowledge of the religions. One finds in the historical dictionary of religious sects edited by De la Croix articles upon Christianity, Mohammedanism, and Zoroaster, the polytheistic beliefs of the Graeco-Romans, but nothing of Brahmanism. In the first volume of his work, *Origine de tour les cultes*, Dupuis attempted a sketch of religious geography, in which, however, he did not even use the work of Fréret and Guignes. The volumes relating to the worships of Greece, Rome, and Egypt are good, but those relating to Christianity are without value. The most useful part of Dupuis' work relates to the different religions of the tribes of Spanish America. Dulaure's work on the faiths which have preceded idolatry has much merit, but he treats only prehistoric religions. In the last chapter of *Ruines*, Volney makes a sort of division of the different religions of the world. Moses, Zoroaster, Brahminism, Buddhism, Mohammedanism, and Christianity have each a special chapter, and are each assigned a special place. But Volney did not have at his disposal the elements of knowledge necessary to decide where each belonged.

At the close of the eighteenth century (1792) appeared *Parallèle des religions* by Brunet. Although he made use of the works of his time, he did not succeed in giving a clear idea, or in making an exact catalogue, of the religions of which he treats. He includes, too, under one vague title of "Modern Paganism," the religions of Asia, among which he distinguishes the religions of Persia, the Ganges, Thibet, China, Japan, and the Tartars. A special section is devoted to ancient Paganism, Mohammedanism, Judaism, and Christianity. These religions are compared, but no statistics are given.

A résumé of the progress of the eighteenth century in the knowledge of the religions of the world shows that, while the educated knew that there existed, or had existed, many great religious faiths, its knowledge of the nature of the faiths themselves was very inaccurate and limited.

The conquest of India by the English, and of Egypt by the French, were the two events contributing the most to lift the vail which still obscured the knowledge of the religious development of mankind. The conquest of Egypt was followed by discoveries which made the study of the religions of Egypt, Assyria, Phœnicia, and Chaldea possible. The conquest of India had a still more important result. It is to this fact that the knowledge of Brahmanism and Buddhism is due.

It does not follow that even these discoveries and voyages, or the scientific works which marked the close of the eighteenth and the beginning of the nineteenth century, changed immediately the ideas of scholars concerning the religions of the world.

Thomas Pinkerton, in his Modern Geography, a work far superior in method to its predecessors, possessed most confused ideas in regard to the religions of India and China. For example, Fo, one of the gods of China, he considered to be the Buddha of Hindostan. In the first edition of Malte-Brun (1810), a geographer still more scholarly, the conclusions concerning the religions of the East are confused and contradictory. In 1826, in several celebrated papers in the *Globe* on the religious future of mankind, Jouffroy embraced under the term Brahmanism all the different religions of India and China. The great work of Benjamin Constant was no more satisfactory. Finally, due to the works of L'Anquetil-Duperron, Jones, Colebrooke, Schlegel, Creuzer, Lassen, Ritter, Burnouf, and others, more exact ideas were spread through Europe, and some attempt to compile statistics of religions was made. Between 1810 and 1836 several of these compilations were published. That of Malte-Brun in 1810 was perhaps the earliest. The following table illustrates the various estimates which were made: —

Religions.	Malte-Brun, 1810.	Graberg. 1813.	Pinkerton, 1817.	De Cassel, 1817.	Balbi, 1829.	Allegemeine Kirchenzeit, 1831.	Malte-Brun, 1836.
Christianity....	220	236	235	252	260	234	260
Buddhism.. ...	150	150	180	316	170	169	200
Brahmanism...	60	60	60	141	60	125	70
Confucianism..	...	...	...	...	...	5	110
Islam.....	110	120	120	120	96	125	110
Jewish.....	5	5	5	4	4	2	5
Fetichism.....	...	...	...	...	...	115	140
Total.....	545	571	600	833	590	775	895

These figures are only very approximately correct. There is remarkable agreement in the estimates of Christianity, Brahmanism, Mohammedanism, and Judaism, but they vary greatly in regard to Buddhism, and as for the religions of China they are valueless. They give no place to the religion of Lao-tze, or to the worship of Ancestors.

Since 1830 the researches of Klaproth, the works of Schopenhauer, the studies of Lassen, Burnouf, and Spence Hardy have drawn more specific attention to Buddhism. The idea was soon advanced that Buddhism held the first place among the religions of the world, and Xavier Raymond, Dubois de Jancigny, Garcin de Iassy, and, finally, Renan soon adopted it. It was also held by the eminent Orientalist Rhys Davids, author of the article on *Buddhism* in the last edition of the *Encyclopædia Britannica.* Schopenhauer, who did much to make known, if not the truth of Buddhism, at least some of its tendencies, prepared statistics to show the great numerical superiority of Buddhism.

The geographers who recognized the necessity of furnishing statistics of religion fell in with these new ideas, as is clearly shown in the two following tables. The first is published in a work by M. l'Abbé de Broglie, on the history of religions, while the second is compiled from recent publications.

Religion.	Cortambert.	Hübner.	Petermann. 1857.	Abbé Martin. 1880.	Meyer.
Christianity.....	325	470	334	350	395.0
Buddhism.....	400	500	400	450	740.0
Brahmanism.....	200	150	200	200	
Mohammedanism.	120	80	160	130	172.0
Jewish.....	5	6	5	5	4.7
Various.....	150	256	200	....	116.5
Total.....	1,200	1,462	1,299	1,135	1,428 2

In this table the various religions of China are confused under the name Buddhism.

The following table shows later estimates: —

Religions.	Kuénen. 1882.	Schlagenweitt. 1882.	Rhys-Davids. 1884.	Spofford. 1881.	Block. 1888.	Berghaus.
	millions.	*millions.*	*millions.*	*millions.*	*millions.*	*per cent.*
Christianity....	400	335	327	388	....	30.7
Buddhism.....	450	341	500	340	400	31.2
Brahmanism...	....	160	160	175	100	13.4
Confucianism..	....	....	155	80	....	....
Islam	175	....	....	201	100	15.7
Jewish.....	....	....	....	7	....	....
Polytheism. ...	....	....	101	....	.. .	8.7
Sintoism.....	....	....	....	14	....	....
Total.....	....	....	1,243	1,205	....	99.7

In this table the estimates of Kuénen, Schlagenweitt, and Block do not present totals; that of Rhys-Davids has no sufficient basis for reckoning; while the system of proportion which Berghaus advances has been demonstrated by Max Müller as inaccurate.

We are thus led to inquire as to the basis and conditions necessary to establish reliable, scientific religious statistics.

The lack of agreement in the estimates of the preceding tables, although prepared for the most part by competent judges, indicates that the methods followed in their compilation were deficient. A better method was adopted by M.

Maurice Block, in *Théorie de la statistique* (1886), in considering each country in Europe separately. He thus arrived at fairly accurate conclusions.

This method should be vigorously followed, and is that which is here adopted. It is not without difficulties, but they are surmountable. In fact, religious statistics have shared in the general advance of statistics in our century. Most governments have recognized the necessity of possessing and preparing exact statistical information concerning the interests with which they are charged. Many admit religion — and they are to be congratulated — as among these interests, and consequently are provided with statistics upon this as upon other subjects far more exact than those compiled by individuals.

To these official records may be added those which the different sects themselves furnish. In this respect the superiority of the Christian nations is at once evident, since many of the ordinary occurrences of human life have for it a religious significance, and as such have a place in statistical registration as in baptism, marriage, and interment. In Christian countries these records are not the only means furnished by a church for verifying the extent of a given religion in any country, though they are always the most exact. Very interesting estimates may be reached by estimating the number of priests and churches, the seating capacity of the latter and the amount of the contributions.

In the case of other religions certain ceremonies enable the student to obtain valuable information, notably the obligatory presentation of the new-born infant at the mosque as by the Mohammedans, the investing with the tonsure among the Hindoos as in the Sudra caste, and the records of the family genealogy carefully inscribed on tablets on the altar to the ancestors among the Chinese.

It should be added that the great nations of Asia are naturally much better known today than during the last century. The English government has prepared the record

of religious history in India, while the Empire of China has been canvassed by travellers whose evidence we may compare and weigh. In the two Americas and Australia, Christianity being practically the only religion, the difficulties presented to the statistician are very few. In Africa the obstacles are much more serious. Finally, the population of the different countries of the world, an essential element in all religious computations, has been recently treated in the scholarly survey by Lavasseur, before *l'International Institut de Statistique*. It is to be observed, however, that there is a notable difference of opinion concerning the population of China, representing a fourth of the human race.

Religions differ not only in the number of their adherents, but also in their degree of universal distribution over the globe. In order, therefore, to give an accurate account of the extent of a religion, it is necessary to consider its territorial distribution, that is, its capacity for wide adoption. This fact cannot be too strongly insisted upon in a consideration of the relative importance of the great religions, and study of the following facts should correct many inaccuracies in statistical tables.

1. The Christian religion occupies almost exclusively, and but little outside, Europe, America, and Australia, over an area of 60 million kilometers, with a population of 477,000,000, not including territories and populations which it can claim in Africa and Asia. None of the other great religions shows such a universality of character except, possibly, Judaism, and consequently none has a comparable sphere of action.

2. The chief inquiry in the preparation of a statistical religious table concerns the distribution of the religions of Asia, Africa, and Oceanica.

3. Christianity is not only the most important religion, but also that in which divergent tendencies are most pronounced, producing sects and sub-sects, of whose extent and character statistics should give an account.

4. Divergent tendencies of the same nature, though less

characteristic, are seen in Mohammedanism, Brahmanism, and Buddhism; but the resources of statistics do not admit of estimating their relative importance. Such in Mohammedanism are the Musslemen Sunnites, and Chyites; in Brahmanism or Hindooism, the sects of Vishnu and Siva; and in Buddhism, the Buddhists of the North and of the South. For other religions the separation is not so violent nor important as that of the Catholic and Protestant churches of Christianity.

5. From preceding considerations it is evident that the study of religious statistics should begin with an examination of the religions in Asia, for there all the great religions meet on a common ground, and beyond it the influence of several does not extend.

Extent of Religions of Asia.

Asia, with an area of 42,000,000 sq. kil., is inhabited by a population of 795,000,000, divided into four groups.

1. The Northern, dependent upon the Empire of Russia, with 60,000,000 inhabitants.

2. The Western, with a population of 33,625,000, including the provinces of the Ottoman Empire, Arabia, Persia, Kafiristan, Afghanistan, and Turkestan.

3. The entire Indian group, with a population of 259,000,000.

4. The Eastern group, consisting of China, Indo-China, and Japan, with 487,000,000 inhabitants.

In a general way, a distinct great religion apparently coincides with each of these territorial groups: Christianity to the North; Mohammedanism to the West; Brahmanism or Hindooism to the Central; and Buddhism to the Eastern group. This division has been the source of many errors. In the first place Mohammedanism has spread over all parts of Asia and throughout has a large following; the same is true of Christianity though in a much less degree. Secondly, there exist in the fourth or Eastern group, the vast world of China and Indo-China, other religions than Buddhism. These are: 1st,

the worship of Ancestors spread throughout China, and the Eastern neighbors of China; 2nd, the State Religion, or Confucianism; 3rd, Taoism, or the religion of Lao-tze. The Chinese have a saying that the three religions make but one. Nevertheless, there is no real likeness between them. The chief religion is always the worship of Ancestors, upon which is based the social order of China. Each family has its altar to its ancestors, and there it worships. Confucianism is the official religion of letters. As to Taoism, it is a special religion running parallel with the progress of Buddhism in China. Buddhism is not included in the San-kiao-y-kiao, where the three religions are made one.

Long and difficult study and travel have been necessary to distinguish these four religions of China. In the first volume of *Chips from a German Workshop*, Max Müller insisted upon recognizing the different religions of China. Rhys-Davids, Reclus, Edkin, and Beal, however, have persisted in finding only Buddhists in the fourth group, and thus made Buddhism the principal religion of the race. More recent and competent writers on China, such as Legge, Douglas, Williams, Wilson, and Cordier have accepted the opinion of Max Müller. The weakness of Buddhism is shown by Pére Huc and M. Escayrac de Lauture, while the traditions and religious habits of the population, the number of temples, the importance of the worship of ancestors, which has been recognized by E. Reclus, leave no longer a doubt. If doubts still existed they would be dissipated by the work of Monier Williams, devoted to Buddhism (London, 1889). "Professor Legge informs me," he says in a postscript to the preface, "that Dr. Happer, a Presbyterian missionary who has lived in China for forty-five years, and who knows thoroughly the statistics concerning Buddhism, counts in China only 20,000,000 Buddhists, and 72,500,000 in all Asia. Dr. Happer says that if the Chinese are called upon to classify themselves as Buddhists, Taoists, or Confucianists, nineteen-twentieths claim the title of Confucianists." Mr. Williams thinks that the whole number of Buddhists does not exceed 100,000,000.

Finally, the recent publication of religious statistics of Japan, where the faith of the population can be determined by the number of temples and priests, the complete distinction of the religions (Shintoism and Buddhism) not only confirms the opinions of Williams, Legge, Wilson, and others, but give a basis for making the first division of the population of China according to religion. Two-thirds of the temples can be attributed to Confucianism and the worship of Ancestors combined, and the other third is equally divided between Buddhism and Taoism.

We are now prepared to present a table of statistics for each of the great religions of Asia, using for this work the statistics of the Catholic and Protestant missions, the governments of India, Japan, and Russia; the works of Reclus, Medhurst, and Williams; statistics of the *Gotha Almanac*, *Statesman's Year-Book*, works of Kolb, and the articles on the *Catholic Church*, *Protestants*, *Russia*, *Buddhism*, *China*, *Brahmanism*, in the last edition of the *Encyclopædia Britannica*.

I. Christian.

CATHOLIC MISSIONS.	
India,	1,198,569
China,	1,115,681
Turkey,	663,000
Asiatic Russia,	70,000
Japan,	30,000
	3,077,250
PROTESTANT MISSIONS.	
India,	534,250
China,	88,500
Turkey,	20,000
Asiatic Russia,	20,000
	662,750
ARMENIANS,	1,690,000
JACOBITES,	70,000
ORTHODOX GREEK.	
Turkey,	1,620,000
Syria,	50,000
Palestine,	150,000
Asiatic Russia,	7,000,600
	8,820,000
NESTORIANS,	80,000
Total,	14,400,000

II. Mohammedan[1].

India,	50,121,595[2]
China,	21,000,000
Persia,	7,700,000
Cashmere,	1,335,000
Afghanistan,	4,000,000
Belouchistan,	350,000
Independent Tartary,	2,800,000
Kaffiristan,	500,000
Arabia and Oman,	2,102,000
Asiatic Russia,	7,500,000
English Possessions,	120,000
Asiatic Turkey,	12,012,000
Total,	109,540,595

[1] Estimate of Dabry de Thiersant.

[2] Sir Monier Williams estimates 55,000,000.

III. Brahmanism or Hindooism.

Official statistics of India give the exact number of Hindoos, who are members of some one of the sects included in the name of Hindooism, as 187,937,450. Sir Monier Williams estimates it at 200,000,000, claiming that other religions of India rapidly give way in favor of one of the three sects of Hindooism,— the sects of Siva, Vishnu, and Krishna.

These groups are estimated as follows: —

Aboriginal religions,	6,246,511
Sikhs,	1,853,426
Jains,	1,221,885
Parsees,	85,597
Scattered,	952,039
Total,	10,539,458

The Parsees represent the survival of one of the great religions of mankind, Mazdaism.

IV. Buddhism. This has not the stability of other great religions, such as Christianity, firmly seated in Europe, America, and Australia; or of Hindooism, master of India; or of Mohammedanism and the Worship of Ancestors, masters of China. It has two hearths, one in Thibet and the other in Indo-China, in the centres of subject populations. In China it has only a secondary importance. As travellers have encountered its pagodas and its priests throughout the East, a considerable population has been credited with this religion which do not belong to it.

Buddhists of the North.	
Thibet,	6,000,000
Burhma,	5,400,000
Nepal-Assam,	1,500,000
Mongolia,	2,000,000
Cashmere,	200,000
Asiatic Russia,	600,000
China,	84,000,000
Total,	99,700,000

Buddhists of the South.	
Ceylon,	1,700,000
Siam,	5,800,000
Tong-Quin,	6,000,000
Cochin-china,	2,200,000
Cambodia,	1,000,000
Settlements,	600,000
Annam,	6,000,000
	23,300,000
Buddhists of the North,	99,700,000
Total,	123,000,000
Buddhists of Japan,	24,900,000
Grand total,	147,900,000

By these calculations we arrive at a larger result than that of Monier Williams, who possibly did not include the Buddhists of Japan.

V. The Worship of Ancestors and Confucianism. As has been already indicated, the Worship of Ancestors is the true religion of China. It is also the official religion, while the Chinese enter indiscriminately into all the temples of the Buddhists and Taoists to burn their incense or bring their flowers. A very small number of them assist in the ceremonies, while all perform the rites due to the Ancestors, regarding the Emperor as the Son of Heaven, and worshipping Confucius. It is important not to depreciate the influence of the Worship of Ancestors and Confucianism in order to magnify that of the true Buddhists and Taoists. Consequently, with at least 256,000,000 followers, Confucianism and the Worship of Ancestors becomes the second religion of mankind.

VI. It is necessary also to give a place to the sect of Lao-tze. This possesses many temples in China; and its priests and ceremonies are entirely distinct from those of Buddhism. The number of followers of this philosopher is estimated at 43,000,000.

VII. Shintoism. This is the ancient religion of Japan. It includes 14,000,000 followers. According to an estimate prepared by the government of Japan, which made a record of the number of temples and priests of Japan on December 31, 1884, Shintoism possessed 14,613 priests, and 16,092 preaching priests, with 190,418 temples. The Buddhists counted 130,573 priests and 72,017 temples. Taking the mean proportional between temples and priests, Shintoism is reckoned at 14,000,000 and Buddhism at 24,900,000.

VIII. Judaism. The Jews who have exercised so great an an influence upon the religious development of mankind have almost abandoned Asia; they number there no more than 200,000. The religious statistics of Asia, according to the most recent estimates, are summarized as follows: —

1. Religion of China, or Ancestor-Worship and Confucianism,	256,000,000
2. Hindooism, or Brahmanism,	120,000,000
3. Buddhism,	147,900,000
4. Mohammedanism,	109,500,000
5. Taoism,	43,000,000
6. Christianity,	14,400,000
7. Shintoism,	14,000,000
8. Judaism,	200,000
	775,000,000

If the population of Asia is estimated at 790,000,000, there remains 15,000,000 which belong to the different religions of India, Manchuria, Corea, and Indo-China, concerning which no information is as yet received. The very inferior position of Christianity in Asia, her birth-place, should be noted.

Religions of Africa.

For the continent of Africa the following approximate estimates are presented: —

Christian,	7,400,000
Mussulmen,	36,000,000
Polytheists or Fetich Worshippers,	97,000,000
	140,400,000

The Christians are divided into —

The Church of Abyssinia,	3,000,000
Catholic Church, North Africa,	497,030
" " Western Africa,	1,026,950
" " Eastern and Central Africa,	39,000
" " Islands of the Indian Ocean,	296,940
" " Islands of the Atlantic Ocean,	796,000
Protestant Churches,	1,744,080
	7,400,000

There are 400,000 Jews in the various sections of Africa.

Oceanica.

The distribution of religions in Oceanica, with estimated population of 38,161,734, is estimated as follows: —

Christians,	9,119,282
Mussulmen,	24,669,787
Polytheists or Fetich Worshippers,	4,372,665

Of the Christians 6,574,481 are Catholics and 2,724,801 are Protestants. The Catholics are distributed as follows: —

Philippine islands,	5,502,000
Dutch islands	400,915
Polynesia,	80,600
New Zealand,	68,984
Australia,	521,982

Statistics of the Religions of America.

Christianity possesses the continent of America, where the population is increasing with the greatest rapidity, now exceeding 112,000,000. With the exception of the worship of a few savage tribes, Christianity has replaced all the ancient religions of Mexico and Peru; and it is also noticeable that other religions, as Mohammedanism particularly, in spite of its ubiquity, have obtained no foothold. Besides being almost entirely Christian, America is divided in very equal proportions between two of the three great Christian churches. Subtracting from the 112 millions of people in America those who are non-Christian, there still remains more than 110 millions of Christian population. The non-Christain groups are: —

Inhabitants of Greenland,	10,000
Inhabitants of Arctic regions,	56,446
Indians of the United States,	212,658
Savages of Brazil,	600,000
Savages of Paraguay,	130,000
Savages of other states,	300,000
	1,309,104

According to the Atlas of the Catholic Missions, made with great care in America, the Catholic church includes —

In the United States,	8,000,000
In Canada,	1,796,882
In Central America,	15,329,000
In South America,	27,268,000
	52,393,882

It is now estimated that there are 58,000,000 Catholics and 57,000,000 Protestants in America, 50,000,000 of whom are classed as such in the United States, 3,000,000 in the Dominion of Canada, and 4,000,000 in Central and South America.

Religious Statistics of Europe.

With the exception of an altogether secondary group of Mussulmen and Jews, found in Europe, the only religion of

Europe is Christianity. But, instead of being subdivided, as in America, into two great divisions, in Europe there are three, each of which has many adherents, covering a large extent of territory. The result of these estimates, which are highly reliable for Europe, shows that the Catholic church equals the two others — the Protestant and Orthodox churches — combined; that the extent of these two is about equal; and that the Israelites and Mussulmen hold positions of equal importance.

RELIGIONS OF EUROPE. IN THOUSANDS.

	Population. 1888.	Catholic Church.	Protestant Churches.	Orthodox Church.	Jews.	Mohammedans.	Religion not stated.
Russia	93,000	9,600	3,400	73,310	3,400	3,000	290
Germany	47,200	17,100	29,478	.....	590	.....	32
Austro-Hungary	39,900	31,100	3,900	3,100	1,700	.....	100
France	38,300	35,387	580	.....	49	.....	84
United Kingdom	37,200	6,500	30,100	.....	100	.....	500
Italy	30,000	29,850	62	.....	38	.....	50
Spain	16,900	16,850	29	.....	5	.....	.....
Belgium	5,900	5,880	15	.....	3	.....	2
Roumania	5,400	100	15	4,800	400	30	55
Ottoman Empire	4,900	320	11	1,700	60	2,708	70
Netherlands	4,400	1,545	2,756	.....	83	.....	16
Portugal	4,400	4,300	.....	.....	.....	....	1
Sweden	4,700	1	4,698	.....	2	.....	1
Switzerland	2,900	1,172	1,710	.....	8	.....	10
Denmark	2,100	3	2,089	.....	4	.....	4
Greece	2,000	10	10	1,930	5	45	.....
Servia	2,000	6	1	1,973	5	15	.....
Bulgaria	2,000	29	.....	1,393	.....	571	.....
Norway	1,960	1	1,958	.....	.....	.....	1
Roumelia	976	30	.....	700	4	240	2
Montenegro	300	5	.....	290	.....	.....	1
Luxembourg	200	200	.....	.....	.....	.....	.....
Malta	160	160	.....	.....	.....	.....	.....
Gibraltar	16	16	.....	.....	.....	.....	.....
Total	346,812	160.165	80,812	89,196	6,456	6,629	1,219

Comparative Table of Religion.

The following table is a résumé of the preceding estimates. Religions are classed in order of importance, and by branches of the race. Christianity represents at least one-third of the race, and the Semitic-Aryan branch, to which it belongs, represents at least one-half. The other half is quite equally divided in two parts, — the Aryan branch, including the two great religions which arose in India, and the Chinese branch.

Although inaccuracies are inevitable, it is safe to say that in the estimates of Christianity and its subdivisions, Mohammedanism, Judaism, Hindooism, and Shintoism the error cannot be large. It remains to discuss the division of the population of China among the different religions found there. But one point at least is gained; it is no longer possible to consider the 382 millions of inhabitants of China as Buddhists. Upon this point the decisive observations made by Max Müller twenty-five years ago have borne fruit. Buddhism, which is essentially a monastic association, loses thus the place which had been wrongly assigned to it.

The immense superiority of the Semitic-Aryan branch is striking, and it corresponds with the direction of civilization. Christianity and Mohammedanism alone still enjoy the vigor of proselyting which characterizes living religions. The Worship of Ancestors and Confucianism, as well as Hindooism, lack the power of expansion necessary for universal religions.

Distribution of the Great Religions.

	Semitic Aryan Race.					Aryan Race.		Chinese Race.			
	Christianity.			Moham-medanism.	Judaism.	Hindooism.	Buddhism.	Worship of Ancestors and Confucianism.	Taoism.	Shintoism.	Polytheism.
	Catholic Church.	Protestant Churches.	Orthodox Churches.								
Europe	160,165,000	80,812,000	89,196,000	6,629,000	6,456,000	.....	.....	.....	.....	.....	.....
America	58,393,882	57,294,014	.....	.....	.....	.....	.....	.....	.....	.....	1,309,004
Oceanica	6,574,481	2,724,781	.....	24,699,787	.....	.....	.....	.....	.....	.....	4,372,665
Africa	2,655,920	1,744,080	.....	36,000,000	400,000	.....	.....	.....	.....	.....	91,000,000
Asia	3,007,250	662,750	8,820,000	109,535,585	200,000	190,000,000	147,900,000	256,000,000	43,000,000	14,000,000	15,000,000
Total	230,866,533	143,237,625	98,016,000	176,834,372	7,056,000	190,000,000	147,900,000	256,000,000	43,000,000	14,000,000	117,681,669

Christianity.	Total.
Catholic church	230,866,533
Protestant churches	143,237,625
Orthodox church	98,016,000
	472,120,158
Church of Abyssinia	3,000,000
Coptic church	120,000
Armenian church	1,690,000
Nestorians	80,000
Jacobites	70,000
	477,080,158

Classed by Religions.	Number.
1. Christianity	477,080,158
2. Worship of Ancestors and Confucianism	256,000,000
3. Hindooism	190,000,000
4. Mohammedanism	176,834,372
5. Buddhism	147,900,000
6. Taoism	43,000,000
7. Shintoism	14,000,000
8. Judaism	7,056,000
9. Polytheism	117,681,669

Classed by Races.	Number.
1. Semitic Aryan	660,970,530
2. Aryan	337,900,000
3. Chinese	299,000,000

NET PROFITS OF MANUFACTURING INDUSTRIES IN THE STATE OF MASSACHUSETTS.

Twenty-first Annual Report of the Bureau of Statistics of Labor of Massachusetts, March 1, 1891. Part IV. Net Profits in Manufacturing Industries. Pp. 261-630.

By Frederick B. Hawley.

The proportions in which the annual product of any community is ultimately divided among those who created it is an abstruse and difficult matter, as every one who has given much attention to the problem is aware. The difficulties have, indeed, been so obvious that it is only recently that endeavors have been made to collect the data necessary for investigation. Errors in the first attempts to resolve an abstruse problem, concerning which nearly everybody has more or less of a personal bias, must be leniently regarded, and, however we may judge of his final conclusion, we must remain thankful to Mr. Wadlin for the fund of laboriously gathered information he has laid before us.

It is no part of my purpose to call in question the reliability of the original data upon which the conclusions of the Massachusetts report are based. About them, although now and then a pregnant suspicion may arise, outsiders have no sufficient opportunity of judging. What I hope to show is that the final conclusions, really indicated by these data, are very different from those obtained by Mr. Wadlin. I hope, therefore, no one will quote me as positively affirming the correctness of the conclusions I arrive at, though they do appear to me as not at all improbable. All I claim for them is that they are approximately those indicated by the original data furnished by the Report. To the extent these data are incorrect my conclusions must also be erroneous.

This question of distribution can be regarded from two very distinct points of view,— the social and the economic. From the latter incomes must be discriminated according to their real character. From the former, the social class, to which the recipient of the income belongs, is the important thing. Thus, lawyers, doctors, artists, and most of those in receipt of salaries, belong socially to the moneyed classes, while, in economic statistics, they must be ranged with other laborers. So, also, if we are considering the social relations of employers and employes, such part of the former's income as is the result of their own labor must be looked upon as part of the income of the class, whereas in economic investigations it must be regarded as

wages. It is, of course, perfectly legitimate to base statistical investigation upon either standpoint, but it is not legitimate to use both bases in the same investigation, or to apply social conclusions to economic data, or the reverse. It appears to me that Mr. Wadlin has fallen into both of these errors. He states his problem as one of Economics. "What are the actual shares of labor and capital in the product to which each has contributed?" And he is careful to define both labor and capital strictly in their economic sense. Now, there is only one method of division that could possibly occur to anyone really grappling with this as a question of economics. He would necessarily seek first to find out how much of the final value was due to other industries, contributed, as it were, from the outside, and therefore not resolvable into its component parts. The remainder of the product would be added value, and this he would proceed to distribute as well as he could, in wages, rent, interest, and profit; discriminating, very likely, salaries from wages, so that his economic results would be capable of social application.

Mr. Wadlin proceeds on a very different plan, because, while professing to study the matter from the economic standpoint, he really adopts the social point of view. That is, instead of attempting to discover what capital, as a whole, gets out of the product, he tries to find out what is obtained by such of the capitalists as happen also to be employers of labor. Then, having obtained this, at best only a social fact, he steps back on his economic platform and proceeds to use his social fact as a basis for economic deductions. Not only are conclusions, so derived and used, invalid, but the form of the tables in the Report suffers from this scientific strabismus. In his "Cost of Production," which should correspond to what I have spoken of as the value extrinsically contributed, are to be found such items of added value as salaries, wages, rent, new equipment, and taxes. In his "Excess of Selling Price above Cost of Production" are found the items of depreciation, selling expenses, and losses by bad debts; all really elements of cost. He includes, under "Net Profits," what employers receive as compensation for their own labor. And, finally, he computes the part of "Net Product" to be apportioned to interest, not on the whole capital engaged, as should have been done if interest and profit were to be scientifically discriminated, nor on the amount of borrowed capital, as would have been in accordance with ordinary business usage, and also in accordance with the employer's standpoint,

but on what he calls "Cash and Credit Capital,"— that is, the circulating capital engaged. In this he is not even consistent with the point of view (that of the employing class) he has disclaimed but unconsciously adopted.

Now, it may be said that these theoretical objections to the form of the tables in the Massachusetts Report are trivial; that the figures are there and can easily be rearranged by the critical reader, who should not be misled by their bad arrangement. This is, in a measure, true, but it must never be overlooked that the great mass of readers are not critical, and that even critical readers should not be obliged to spend their time and labor in readjusting statistical tables. But, however this may be, it can hardly be contended that this neglect of form is a trivial matter when attention is called to the extent in which Mr. Wadlin himself has been misled by it. The last 230 pages of his report (more than three-fifths of it) are occupied exclusively with laborious calculations, based upon Gross Profits being 12.95 per cent, and Net Profits being 3.90 per cent of the selling price. Now, as I have already pointed out, his "Gross Profits" includes a good deal that must be reckoned among the elements of cost, from whatever point of view cost is considered. And the "Net Profits," which are calculated to be 3.90 per cent, should be, as appears from the tables given, 7.02 per cent from the social point of view,— 7.02 per cent, less an allowance for unsalaried efforts and for interest on all the capital engaged, from the economic point of view; and 5.30 per cent from the employer's point of view, as then 1.40 per cent would have to be added for interest on the circulating capital not borrowed. This percentage of 3.90 is expressive of absolutely no relation of any kind, and the enormous labor expended in calculations, founded upon it as a basis, has been simply thrown away. And this serious misdirection of effort is the result of the defective form in which the data have been tabulated.

The value of the concluding 230 pages is negatived, however, not only because founded upon improperly classified facts, but also, as I hope to show, because the percentages, which serve as their basis, are by no means those yielded by a correct analysis of the original data.

I here reproduce from pp. 398–399 of the Massachusetts Report such portions of the final tables as are essential to the discussion.

ALL INDUSTRIES.

Classified Capital (23,431 establishments).	
Land, buildings, and fixtures	$118,886,643
Machinery, implements, and tools	115,254,330
Cash capital	173,440,947
Credit capital	93,012,457
	$500,594,377

SELLING PRICE.

Classification as Regards Profit.	Number of Establishments.	Value of Goods Made and Work Done.	Percentage of Selling Price.
Making a profit	9,251	$414,516,434	61.44
Not making a profit	762	52,416,619	7.77
	10,013	$466,933,053	69.21
Not answering	13,418	207,701,216	30.79
	23,431	$674,634,269	100.00

RELATION OF COST OF PRODUCTION TO SELLING PRICE (10,013 ESTABLISHMENTS).

Classification.	Percentage of Selling Price.
Stock used	58.91
Salaries	1.73
Wages	22.34
Rent	0.73
Taxes	0.56
Insurance	0.33
Freight	1.27
New equipment	0.24
Repairs	0.81
Other expenses	0.13
Excess of selling price above cost of Production	12.95
Total	100.00

DISTRIBUTION OF EXCESS OF SELLING PRICE ABOVE COST OF PRODUCTION (10,013 ESTABLISHMENTS).

Classification.	Percentage of Selling Price.
Interest, 5 per cent on cash and credit capital	2.15
Depreciation, 10 per cent on value of machinery, implements, and tools	1.90
Allowances for selling expenses and losses by bad debts, 5 per cent on selling price	5.00
Net profit	*3.90
	12.95

* Equivalent to 4.83 per cent on amount of capital invested.

For the convenience of the reader, I place here, in juxtaposition to the above tables, such tables as, it appears to me, a proper analysis of the original data really yields. The explanation of each modification of the figures of the Report will be found in notes and appendices, which, as they contain the reasons which explain the modifications the writer has ventured to make, and are essential to the understanding of his tables, the reader is requested to read in connection with these tables, and before passing on to what follows.

CLASSIFIED CAPITAL (23,335 ESTABLISHMENTS ENGAGED IN 63 INDUSTRIES, PRINT WORKS BEING EXCLUDED; APPENDIX A).

Land, Buildings, and Fixtures	$114,322,572
Machinery, Implements, and Tools	111,659,289
Cash Capital	170,381,965
Credit Capital	88,039,141
Rented Land, and Buildings (estimated). (Appendix B.)	65,000,000
Capitalized Value of Patents, Copyrights, Good Will, and Special Privileges (estimated). (Appendix B.)	50,000,000
	$599,402,967

SELLING PRICE (23,335 ESTABLISHMENTS; SEE APPENDIX A).

Classification as Regards Profits.	Number of Establishments.	Value of Goods Made and Work Done.	Percentage of Selling Price.
Making a profit	9,196	$407,846,626	61.92
Not making a profit	752	46,134,659	7.00
	9,948	453,981,285	68.92
Not answering	13,387	204,772,141	31.08
	23,335	658,753,426	100.00

RELATION OF COST OF PRODUCTION TO SELLING PRICE (9,948 ESTABLISHMENTS PRINT WORKS BEING EXCLUDED; SEE APPENDIX A).

Classification.	Percentage of Selling Price.
Stock used*	57.65
Insurance	.33
Freight	1.27
Repairs. (Appendix C.)	.81
Other expenses reported	.13
Depreciation (Mr. Wadlin's estimate). (Appendix C.)	1.90
Selling expenses (estimated with Mr. Wadlin at 2½ per cent, but some deductions allowed here). (Appendix D.)	1.75
Contributed from outside	63.84
Added value	36.16
	100.00

* This table is not exact. The rectification of each item for the omission of Print Works involved so much labor that I did not undertake it, but deducted the aggregate change, 1.26 per cent, from Stock Used, as it was evident about all of it would be found there, the error in the Print Work returns being due to an excessive valuation of Stock Used. Moreover, the apportionment of the correction makes no difference at all in Added Value, which is the sum we have to deal with.

DISTRIBUTION OF ADDED VALUE (9,948 ESTABLISHMENTS).

Classification.	Percentages of Added Value.		
Loss by bad debts (estimated, in agreement with the Report, at 2½ per cent, of which, for reasons given, only ¾ of 2½ per cent on added value is to be charged here) (Appendix E.)	.....	.62	.....
Taxes	.....	.56	.....
Total to the state and to laborers who failed to pay their debts	.....	.....	1.18
Salaries	.....	1.73	.....
Wages	.....	22.34	.....
Total to employes	.....	.....	24.07
Personal services of members of private firms, 12,492, at $600 each. (Appendix F.)	.....	1.65	.....
Rent	.73	.....	.....
Interest (5 per cent on all capital except rented capital)*	4.06	.....	.....
Total for use of capital	.....	4.79	.....
Invested profit (new equipment). (Appendix C.)	.24	.....	.....
Uninvested profit	4.23	.....	.....
Total for risk of capital	.....	4.47	.....
Total to employing and moneyed classes	.....	.....	10.91
			36.16

* This is not exact. The Report does not give the classified items of capital for reporting establishments; consequently, I have been forced to use the rate that applies to the whole 23,335 establishments.

RELATION OF COST OF PRODUCTION TO SELLING PRICE (23,335 ESTABLISHMENTS, BEING ALL EXCEPT PRINT WORKS; SEE APPENDIX A).

Classification.		Percentage of Selling Price.
Stock used. (See note to similar table of 9,948 establishments).		57.65
Insurance		.33
Freight		1.27
Repairs		.81
Other expenses reported		.13
Depreciation. (Less, according to tables in the Report, for all than for reported industries.) (Appendix C.)		1.71
Selling expenses. (Appendix D.)		1.75
		63.65
Less allowance for greater proportion of unreported establishments in the more profitable industries. (Appendix G.)	.54	
Less allowance for greater probable excess in selling price in establishments not answering. (Appendix G.)	2.61	
	3.15	
Half deducted here and half from wages in following table		1.58
Contributed from outside		62.07
Added value		37.93
		100.00

DISTRIBUTION OF ADDED VALUE (23,335 ESTABLISHMENTS, BEING ALL EXCEPT PRINT WORKS; SEE APPENDIX A).

Classification.	Percentage of Added Value.		
Loss by bad debts (see second table preceding). (Appendix E.)	.....	.62	.....
Taxes	.....	.56	.....
Total to the state and to laborers who fail to pay their debts	.....	.....	1.18
Salaries	1.73	.....	.....
Wages	22.34	24.07	.....
Less corrections, necessitated by including establishments that failed to report in full. (See preceding table.) (Appen. G.)	.....	1.57	.....
Total to employes	.....	.....	22.50
Personal services of members of private firms, 29,302, at $600 each. (Appendix F.)	.....	2.67	.....
Rent	.73	.....	.....
Interest (5 per cent on all capital except rented capital)	4.06	.....	.....
Total for use of capital	.....	4.79	.....
Profit reinvested in business (new equipment). (Appendix C.)	.24	.....	.....
Profit not reinvested in business	6.55	.....	.....
Total profit for risk of capital	.....	6.79	.....
Total to employing and moneyed classes	.....	.....	14.25
			37.93

This latter table is as close an approximation of the percentages indicated by the original data as I have been able to reach. Some further analysis may be useful as a means of comparing the innate probability of the results obtained with those arrived in by the Massachusetts Report.

DISTRIBUTION OF ADDED VALUE.

Classification.	Per cent.
Taken by the state	1.48
Obtained without payment	1.63
Paid in wages and salaries	59.32
Earned by unsalaried labor of employers	7.04
Secured by capital	30.53
	100.00

Comparing the returns to capital and labor, if the item of earnings of employers is classed with wages, as must be done from the economic standpoint, then labor secures 68.49 per cent and capital 31.51 per cent of their joint product. If, on the other hand, we adopt the social point of view, and class these unsalaried earnings as part of the income of the moneyed classes, labor secures 61.22 per cent and capital 38.78 per cent of their joint remuneration. According to the tables in the Report, these latter ratios are 77.42 per cent to labor, and only 22.58 per cent to capital. As no estimate is made of the value of unsalaried labor, we cannot know what ratio would be given, as between all wages on the one hand and all other forms of income on the other.

My last table indicates that capital engaged in the manufactures of Massachusetts earns for its owners and temporary controllers 5 per cent in interest, and 7.46 per cent in pure profit. Owing to their faulty form, the corresponding percentages do not appear clearly in tables of the Report. The statement here is particularly confused. Interest is figured on only 52.34 per cent of the total capital, which would make the rate of interest only 2.77 per cent on all the capital engaged. The rate of profit is made 4.83 per cent of total capital, but in this calculation "New Equipment" and rentals have been excluded and included "unsalaried labor." Moreover, the Report

omits, as I have pointed out, two very considerable items of capital, amounting, according to my estimates, to $115,000,000, although the returns to this capital must come out of the product under analysis. I do not attempt to untangle this skein, but simply dig out from the table the items that are really returns to capital, and add them together. They are Rent, 0.73 per cent; New Equipment, 0.24 per cent; Interest, 2.15 per cent; Net Profit, 3.90 per cent; making in all 7.02 per cent of the total product. This would give us 7.57 per cent as the total return to the capital engaged (rented and special privilege capital included). But this ratio includes the earnings of the unsalaried labor of partners in private firms, which, at $600 each (certainly a very moderate calculation), would amount to 1.78 per cent on capital for the reporting establishments, and to 2.89 per cent for all establishments taken together. Now, what do these figures mean? Simply this, that in the reported establishments, after interest on capital at 5 per cent and the unpaid salaries of principals are allowed for, 0.79 per cent is all that can be squeezed out of the product for profit. In other words, those shrewd and cautious fellows, the manufacturers of Massachusetts, are accustomed to pay 5 per cent for money, in order that they may secure for themselves an additional three-quarters of one per cent, and a two-dollar-per-day job. And it is only the richer two-fifths who are able to do so well as this. If we take all of them together, we find them borrowing money at 5 per cent, not only without any profit but at an absolute loss of 0.32 per cent, in order to get a two-dollar-a-day job. What becomes of the poor fellows, from whom the banks extort 6 per cent, it would sadden the reader too much to contemplate.

Mr. Wadlin frequently assures us, without a perception of the inherent improbability of the statement, that the average Massachusetts manufacturer, employing a capital of $10,701, after allowing for interest on his circulating capital, but without an allowance for interest on the permanent part of his investment, obtains but $517 per annum as compensation for both his personal labors and the use of his capital. In other words, Massachusetts manufacturers would better their position very considerably if they would abandon their property and hire out, in a body, at two dollars per day each.

Now let us examine, in the concrete, the percentages afforded by my last table. We will take what the Report assures us is the average Massachusetts man who engages in manufacturing. We will

suppose him to possess the sum of $10,701, invested in a business just ordinarily hazardous, and that he is possessed of just ordinary ability, and meets with just ordinary good fortune. According to my last table this average man would enjoy a yearly income of $1,933.34 (of which $600 would be wages, $535.05 interest, and $798.29 profit). Now, to use round numbers, would an active and competent business man, employing a capital of $11,000, be looked upon as doing more than fairly well if his business yielded him no more than $2000 annually? Would an active and competent business man of fair experience pay $11,000 for a business (to which he intended to devote his whole time and efforts) which promised less than such a return as this? The appeal is directly to the readers' own common sense. Would you do it? And, if you are a business man and satisfied with your business, are you getting less or more than this proportionably to the size of your investment?

I think there can be but one answer to these questions, namely, that such a return would not even be quite satisfactory to the average man of business. How does it come about, then, that the popular idea of the return to capital is considerably below the percentage we have arrived at? There are, it appears to me, two principal reasons. People are apt to confound the average rate of profit with what economists call the lowest sufficient rate,— the rate, that is, which will suffice to keep in operation the worst managed capital required to produce the amount of the commodity effectually demanded. Those familiar, as most of my readers must be, with the writings of President Walker, do not need to be told that the average rate of profit may well be two or three times this sufficient rate. Secondly, the growth of corporate at the expense of private undertakings has been a marked feature of recent industrial development. As the rate of profit in incorporated companies has been often shown statistically to be below my figures, it may be hastily assumed that the rate enjoyed by private firms must be still lower than the rate enjoyed by corporations.* From theoretic considerations, for the rehearsal of which there is no room here, I have long been of the opinion that the real reason why cor-

* This is exemplified by occurrences, somewhat common recently, in which private businesses are incorporated with a capitalization, frequently 50 per cent, sometimes even 100 per cent, greater than the sum private individuals would give for the property for the purpose of continuing the business as a private firm. And yet the stock of such corporations will not only be placed at par but will continue to sell at par, if the business continues to do as well under corporate management as it did under private.

porate was supplanting private enterprise was not because it was more profitable, but because capital invested in corporations was satisfied with a much lower rate of return than when employed by individuals. It is gratifying, therefore, to find this opinion statistically confirmed by the original data the Report has laid before us; for it is there shown beyond question that businesses conducted in a small way are almost uniformly much more profitable than those conducted in large establishments. It will be readily appreciated how the contrary supposition could not fail to lead popular opinion astray as to the average of profit in all industries taken together.

But, while my results seem to agree fairly well with the commonly observed facts of daily life (while the results of the Report are sufficiently discredited by a similar comparison), I do not ask for their acceptance as authoritative. As I have already cautioned the reader to observe, they are no better than the original data allow. Every error in these data necessarily influences the results of their analysis. It is true that, to a certain extent, errors and mistakes tend to counterbalance each other, but it is altogether improbable that they will exactly or even nearly do this when they are at all considerable either in number and degree. Unfortunately, there are various ear-marks about the original data the Massachusetts Bureau has employed which can hardly fail to make us suspicious of their accuracy. Certainly, if they are accurate the operation of the economic law that profits tend to an equality is more impeded by temporary obstructions than we have been accustomed to suppose. The supposition that the rate of profit varies, according to the figures of the Report, is, as we have seen, not only contrary to sound reasoning, but also hard to believe, that the range of variations in the rate of profits is nearly as wide as is indicated by the analysis I have made.

Then, again, we cannot free ourselves from the suspicion that the same error, which proved so disastrous to the Print Works returns, has been committed to a lesser degree in the returns of other industries. Anyone carefully examining the subsidiary tables of the report can hardly fail to observe that the industries which exhibit an unexpectedly small "Excess of Selling Price above Cost of Production" are the very ones into whose returns errors of this kind would be most likely to creep.

Then, again, the item of New Equipment is so suspiciously small (only 0.24 per cent of the Selling Price) that we can assert almost

positively that many items which should have gone to it have been charged to "Stock Used," "Repairs," or "Wages."

A doubt also obtrudes itself (rising almost to a certainty in some instances) whether Selling Price covers Selling Expenses and Commissions in all cases.

The Massachusetts Cotton Goods industry has been regarded as an exceptionally successful one, and, as a consequence, has attracted to itself more Massachusetts capital than any other single pursuit. Yet in this Report we find that its "Excess of Selling Price above Cost of Production" was among the very lowest, being only 4.26 per cent, and that the Net Loss was 10.91 per cent of the Selling Price,— or in other words, goods costing one dollar to make were sold for eighty-nine cents. Now, the Cotton Goods industry like others has its ups and downs, but I do not believe it ever had as bad a year as this. But if the figures are correct, then it follows that the choice of that year for the gathering of the original data was an unfortunate one. What we want to understand is the normal condition of Massachusetts industry, and it is the duty of the statistician to advise his readers of any abnormal facts among the data on which his calculations are based. The condition of this industry during the year in question was certainly just such an abnormal fact. More than that, its peculiar situation was so important a fact as to suffice by itself to vitiate final conclusion of the Report by 64.61 per cent.

Of course, in any given year some industries will show more and others will show less than their usual profits. But, to fit such a year to serve as the basis of a statistical inquiry of this nature, these antagonistic conditions should nearly balance each other. And when, as in this case, it is obtrusively evident that they do not, very careful attention and mention should be given to the circumstance. There are, as tables in the Report show, several instances of abnormally large profits, but the industries in which they were obtained were all very small, so that even in the aggregate they count for very little. Such as their influence is, it is more than counterbalanced by that of other industries in which the reported "Excess of Selling Price above Cost of Production" was below what its average for a course of years must have been. A study of the subsidiary tables will, I think, make this evident to anyone. But even if this were not true, the abnormal condition of the great Cotton Goods industry greatly overbalances in its effect upon final results all the antagonistic effects of the indus-

tries favored that year by more than average profits. I cannot but think that Mr. Wadlin was bound to apprise his readers of the effects traceable to the abnormal condition of this great industry. As he has not done this, it may assist our comprehension of the matter to supply the deficiency.

The Cotton Goods industry employed 27.33 per cent of the whole capital, and produced 11.55 per cent of the whole output of the 10,013 establishments reported. Two facts are to be noticed,— the great relative importance of the industry, and its unusual preponderance of capital to output. Such an industry must have a very large "Excess of Selling Price over Cost of Production" to yield the ordinary rate of "Net Profit" on capital. According to the returns, this Excess was only 4.26 per cent of the Selling Price, and this netted a loss (according to Mr. Wadlin's way of figuring profit and loss) of 5.77 per cent on capital. On an average of years this industry would certainly yield just about such a percentage of profit. But to give a profit of 5.77 per cent on capital would require 26.08 per cent of the Selling Price. The difference 21.82 per cent on 11.55 of the product amounts to 2.52 per cent of the total product. If, then, the Cotton Industry had been in its normal condition during the year for which the statistics were gathered, the percentage of Selling Price that went to profits would have been 6.42 per cent, according to his own way of figuring Net Profits, instead of 3.90 per cent, as Mr. Wadlin now has it.

It will be noticed that all the suspicions which naturally arise as to the accuracy of the original data, or as to their being representative of normal conditions, make in one direction. So far as they should be justified, by a re-examination of the facts, the correction of the data would in every case go to swell "Net Profits" and the "Excess of Selling Price above Cost of Production." If they should all prove well founded, even if the correction in each instance was quite small, "Net Profits" would assume proportions considerably greater than common observation would allow us to believe. It does not at all follow from this, however, that these suspicions are not well founded. The proper explanation would probably be that items of cost had been omitted from the returns of some manufacturers. This probably has occurred, and to an extent sufficient to materially affect final results. But to gauge the amount of error flowing from this source is utterly beyond the power even of those who gathered the original data.

The more thought I give to this subject the better am I convinced that we can never arrive at the statistical solution of this problem of the division of product between capital and labor by the method of exclusion applied to limited departments of human effort. A fair degree of accuracy can be attained by that method when the remainder sought is a large proportion of the whole. But when the remainder is expected to be small, the method is not to be depended upon, for the reason that all errors are focussed and magnified in the remainder. Thus, in the "Table for all Industries" an error of 1 per cent in "Stock Used" involves an error of over 15 per cent in "Net Profit," the final remainder. Results, inherently subject to such uncertainties, can never command much confidence. The trouble is not with the deductive processes. It requires indeed a broad and firm grasp of economic principles, and a familiar acquaintance with business life to avoid the numerous theoretic pitfalls that beset the path of investigation, but these difficulties are by no means beyond our powers. What we can never be sure enough of is our original data. The gathering of these requires almost, or quite, as much theoretical and practical knowledge as it does to utilize them when gathered. But it is, of course, almost impossible to command such abilities for such work.

Then, again, while it is both useful and interesting to know how the net product of manufacturing is divided between wages and other forms of income, we have only crossed the threshold of our real problem when that is determined, and some allusion to this should have been made in the Report to prevent misuse of its results. The statistical information that we are most anxious to get is how the income of the laboring class, as a whole, compares with the income of the moneyed class as a whole. To obtain a knowledge of the division of the net product of manufacturing tells us little or nothing as to how the gross annual product of the whole country is divided. The proportions for manufacturing are not those for agriculture, or for retailing, or for wholesaling, or for commission and jobbing business, or for the extractive industries, or for transportation, or for brokers, or for banking and insuring, or for the rendering of personal services, or for the services of wealth, such as shelter. Before the great problem is settled not only has the proportion the return to capital bears to the return to labor to be determined for every kind of industrial effort, but they have to be amalgamated in proportion to the net product of each. The moment we attempt to demarcate classes of business we are confronted

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with serious difficulties. We met one of them in this analysis in drawing a line between the manufacturer and his commission house. Then we have to ascertain what part of the net product is absorbed by the merely speculative holders of commodities. The more we consider the problem the more it grows. I do not say that such inquiries as those of Mr. Wadlin are useless. Far from it, they have great value in acquainting us with the conditions of the different kinds of industrial life, and they are useful also as tending to confirm, or qualify, the results obtained in, what I cannot but think, a better and more satisfactory way of attacking the greater problem. The sum annually expended in wages throughout the whole country can be, and is, statistically ascertained, with a close approximation to accuracy. If, then, we could obtain the value, as paid by the final consumers, of all the commodities produced, and all the services rendered in America within the year, we would have the total income of all classes. The difference between this sum and the total of wages is retained by the moneyed classes, and constitutes their income. All of the confusing elements of the problem disappear, and all the sources of error are dried up once these two great sums are known with a fair degree of accuracy. The remainder is a large one, and the mistakes and errors that have escaped detection are not focussed and magnified in it to anything like the same degree that necessarily occurs in Mr. Wadlin's tables. I understand that great pains have been taken in the last census to ascertain the gross value of the material commodities annually produced. If so, we will soon have a firmer basis to go upon, for the data exist from which we can calculate, with a fair degree of reliance, the other elements of the problem, namely, the sum total of wages, and the gross value of services, both those rendered by persons, and those, such as shelter, rendered by invested wealth.

Appendix A.

The returns for Print Works, Dye Work, and Bleacheries makes the "Stock Used" 104.35 per cent of the "Selling Price," and the "Excess of Cost of Production over Selling Price" 28.54 per cent. Or, in other words, these processes of manufacture, instead of adding something to the value of the material operated on, detracted from it to an extent which involved a depairment of 36.25 per cent of the capital engaged.

In a note on page 365, and elsewhere, it is explained that the work done in these establishments was largely custom work, and that, when such was the case, the value of the material (belonging to others) operated on was included in "Stock Used," but not included in "Selling Price," which was credited only with the charge for work done. The returns for these industries are, therefore, fallacious and unfit for statistical purposes. The duty of a statistician in such cases as this is very plain. He must either procure amended reports, or, failing in that, he must reject them altogether. He is by no means justified in placing returns, known to be very erroneous, on a parity with those supposed to be fairly accurate, merely because he has called attention, in a foot note, to their defects. But the initial error of the employment of such statistical data makes it an imperative duty to acquaint the reader with the effect upon final results, which the elimination, or the probable correction, of such data would have. In a note at the end of the report, an attempt is made, it is to be feared not very successfully, to "rehabilitate" this industry, but there is a failure even to hint at any effect upon the final results due to this correction being accepted as probable. Nor can it be pleaded, in extenuation of this offence against statistical method, that the error resulting is an insignificant one, and therefore properly neglected. On the contrary, the rejection of Print Works returns, as confessedly too erroneous to be of any value whatever, increases by 1.26 per cent of the "Selling Price" both what Mr. Wadlin calls the "Excess of Selling Price over Cost of Production" and "Net Profits." The latter, which is the final result, and the one on which about all of the deductive work is founded, is increased by almost one-third by the elimination of print-work returns, or by over 50 per cent if the attempts to correct the returns be accepted. The probability appears to be that the incongruity of the print-work returns was not noticed, nor the character of them known, until after the completion of the tables, and that, in the hurry of going to press, the explanatory foot notes were too hastily assumed to be all the occasion called for. But this excuse, if it be the correct one, is hardly acceptable for an error of such magnitude.

Appendix B.

Evidently, in determining the ratio in which "Added Value" is divided between capital and labor, we are concerned with all the capital employed, irrespective of its form or ownership. The Massachusetts Report seems to have overlooked entirely that part of manufacturing capital invested in patent rights and other special privileges. The capital invested in rented lands and buildings was very likely omitted because rent paid had been included among the items constituting Cost of Production. In doing this, however, a theoretical error has been committed. Manufacturers rent land and buildings, just as they borrow money, in the expectation of obtaining a profit, out of their use, in excess of the rent or interest they

contract to pay. So far as this inquiry is concerned, rented land and buildings stand on an exact parity with what Mr. Wadlin calls "Credit Capital." Both should be included, or both excluded, as items of "Classified Capital."

I have thought it best to put estimated values upon these two items of capital so as to make my tables correct in form. I have, however, no data at hand on which to base my estimates, especially the latter one. But while the two amounts are merely guessed at, they are not, perhaps, wholly improbable. Moreover, what of error is involved is of no great moment to this discussion, as the total of capital is only of use to us in determining what percentage of itself is annually earned by it. The knowledge of this is useful to us as a means of gauging the inherent probability or improbability of our final results, but it has no effect whatever in the determination of the immediate problem in hand, which is how labor and capital divide their joint product.

Appendix C.

As the reader will doubtless notice for himself, I have everywhere in this criticism accepted both the accuracy of the original data and the correctness of the estimates in the Report, contenting myself with endeavoring to show that the final results, deducible from these data and estimates, are not those given us. In pursuance of this policy I have left the item of depreciation unchanged. The estimate of 10 per cent per annum as the average depreciation of "Machinery, Implements, and Tools" is probably fair enough. But if the full depreciation is chargeable as a loss, whatever is expended in keeping up or improving the character of the plant is to be entered as a profit, which, so far as it goes, counteracts or balances the depreciation. If I understand correctly what is said of "New Equipment," on page 494, this expenditure is all included under this head. If so, it may be pretty positively asserted that a good many items which should have been charged to "New Equipment" have been carried to the account of "Repairs," or of "Stock Used," or even to wages. To the extent in which this suspicion proves to be correct, the rectification of the item of "New Equipment" would go wholly to the increase of the share of capital in the net product. There are, indeed, indications that a very serious error lies lurking in those parts of the original data. Thus, Mr. Arthur T. Lyman, in commenting upon this same report,* gives us some figures of his own gathering. He cites the returns of a number of large mills (chiefly cotton mills), which, during the last ten years, have paid $7,229,300 in dividends, and $44,809,962 in wages. But he goes on to state that the actual value of the property held by these corporations is $21,208,974, although the stock capital, originally contributed, and on which dividends are paid, is only $12,000,000. In other words, these corporations, in addition to the dividends they have paid over to their stock-

* *Christian Register*, Nov., 1891.

holders, have realized profits to the extent of $9,208,974, which they have retained and reinvested in their plant, which reinvestments should appear as "New Equipment" in the tables of the Report. It is probable that a considerable portion of these reinvested profits were secured previous to the ten years Mr. Lyman's figures cover. But if three-fifths of these gains accrued during the ten years in question the "New Equipment" account of these mills would be large enough to cover the 10 per cent for depreciation and about 2 per cent on capital annually. Or, to speak roughly, the means of accurate computation not existing, the "New Equipment" account of these establishments, instead of 0.24 per cent, would be about 3.80 per cent of the "Selling Price." As a rule, small establishments do not keep up or increase their plant as carefully as large corporations; but, all allowances being made, Mr. Wadlin's general average of 0.24 per cent for New Equipment looks suspiciously small by the side of Mr. Lyman's figures. The existence of a very considerable error here is morally certain, but in the absence of any authentic data it would, of course, be folly to attempt an estimate. All that can be done is to point out the direction of the effect that would result from its rectification, which would, of course, be an increase in the annual return to capital.

Appendix D.

It is true, as the Report assumes, that 2½ per cent of the selling price is the usual commission charged for selling goods. In properly gathered statistics no occasion would arise for estimating this item. The Selling Price should have been returned exclusive of all commissions and expenses of selling. This is the form adopted by the U. S. Census Bureau, and it is the only form tolerable to correct statistical method. It may also be added that it is the form in which manufacturers who sold through commission houses would naturally employ, both in keeping their books and in making returns. It may therefore be safely assumed that, in a good many instances, no matter how inquiries were worded, net instead of gross receipts have been reported as the selling price. To the extent in which this has occurred it is evident no further deduction should be made.

But it is well understood that a very considerable element of profit lurks in the commissions charged for selling goods, and it is this source of gain which a great many manufacturers seek to secure for themselves by selling their own goods. If the expense of doing this was not considerably under 2½ per cent, these manufacturers (probably a majority of the whole) would send their goods to the commission houses. The fact that they do not do so makes it certain that this 2½ per cent of their output is too large an estimate. The percentage I have assumed, namely, 1.75 per cent, is to be sure only a guess, but it is certainly as large a deduction as is justified by Mr. Wadlin's own estimate.

APPENDIX E.

The Report falls into the error of assuming that all individual manufacturer's loss from bad debts is a loss to employers and moneyed men as a class. It is, indeed, true that 2½ per cent is the ordinary charge of commission houses for guaranteeing accounts. But it is also well known that this charge, like their commission for selling, yields them a very considerable profit, which profit many manufacturers secure for themselves by selling their own goods, or by not requiring a guarantee from their commission houses. These circumstances, however, though they are considerable enough in themselves, are not what I am principally referring to here. Granting for the moment that the average of loss by bad debts is fully 2½ per cent of the selling price, it by no means follows that business men, *as a class*, lose anything like that amount from this cause. When goods sold are not paid for there is no absolute destruction of value, but only a transfer. The buyer gains what the seller loses. When they both belong to the employing and moneyed class, that class, as a class, neither loses nor gains anything. The case is different, however, when the buyer belongs to the wage-receiving and the seller to the wage-paying class, or vice versa. What wage receivers consume without paying for is virtually an addition to the aggregate income of the laboring class, obtained at the expense of the moneyed class. On the other hand, the employers, as a class, gain, and the laborers, as a class, lose when an insolvent firm fails to pay wages earned and due. If we suppose, as we easily may, a state of society in which laborers paid cash for all they bought, individual merchants and manufacturers might continue to lose by bad debts as heavily as before, and might continue to add 2½ per cent to their selling prices to cover this risk. But, as a class, they would suffer no loss at all, the insolvent dealers gaining every cent lost by the solvent ones.

It is evident enough, therefore, that in such an analysis of product as Mr. Wadlin has undertaken, in which industrial classes, and not individuals are to be considered, only such proportion of the losses incurred through giving credit, as can ultimately be traced to failure to pay on the part of wage-receivers, is to be allowed for. Assuming with the Report that 2½ per cent of the selling price covers the risk of selling to both classes of final consumers, and assuming further, what must be very nearly the truth, that two-thirds of all goods produced, and of all services rendered, are consumed by wage-receivers, and the other third by their employers, and neglecting what laborers lose by non-payment of wages, we would have ⅔ of 2½ per cent of the total product of the community as the real loss suffered by the moneyed classes from this cause. This loss would be distributed among various businesses in proportion to their total sales, but its aggregate would be exactly equivalent to ⅔ of 2½ per cent of the values created in these businesses. As the percentage of added value to total sales differs in different industries, we cannot affirm

that in any one of them the loss from bad debts is exactly ⅔ of 2½ per cent of the added value, but we can affirm it of all industries taken together. Whether it would be slightly less or slightly in excess of this ratio for manufacturing we have no means at hand for determining. I have, therefore, employed this average ratio, and find that it amounts to 0.62 per cent of the selling price, instead of 2.50 per cent, as in the tables of the Report. This, of itself, constitutes a very serious modification of his final results, but there can be, I think, no question raised as to the validity of this part of my analysis.

I have not attempted the resolution of this 0.62 per cent into wages and other forms of income, although it seems probable to me that doing so would not vary appreciably my final results. Taking into the account the offset to it, afforded by non payment of wages, and the fact that guaranteeing accounts at 2½ per cent is on the whole a very profitable business, it is altogether likely that capital obtains more than one-third of this item, that is to say, more rather than less than its proportion of the rest of added value.

Appendix F.

This element of unsalaried labor performed by partners in private firms both as managers and as manual laborers could readily have been differentiated from real profits by proper inquiries in gathering the original data. Indeed, this has been accomplished in the tables of the United States Census. The difference in character between the two forms of income is altogether too radical to allow of their consolidation in scientific work. To supply this deficiency in tables of the Massachusetts Report, I am forced here, as elsewhere, to make an estimate I would dislike to venture upon as an original investigation. I have figured out the value of these unsalaried efforts on the basis of each partner in private firms performing $600 worth of labor per annum. This is, to be sure, only what a third or fourth rate clerk can command, but, on the other hand, a few individuals are members of two or more firms, and a few others do not take any part, or a very small part, in the conduct of their business. I am confident, however, that most of my readers will consider the estimate too small rather than too large.

The Report does not give us the number of partners in the 13,387 "Not answering" establishments. I have been obliged, therefore, to assume the same proportions as in the returns of the answering establishments, and that few or none of the unreported establishments were incorporated.

Appendix G.

With the exception of the wholly inexcusable inclusion of the Print Work returns, the Report has erred most seriously in persistently asserting that there is every reason to believe that the same proportions exist in the business of the 13,387 establishments which failed to report, as in

the 9,948 which answered the inquiries made of them. Unfortunately, statistical data are rarely complete, and often the only possible way to supply their deficiencies is to assume the complete similarity to known facts of partially unknown facts, which, so far as they are understood, resemble the known facts. Mr. Wadlin's mistake lies in neglecting to assure himself that this basis of known resemblances existed. If he had looked for them he would have found, instead of resemblances, well marked differences, the probable effects of which should have been carefully thought out. He tells us that the 13,418 establishments which failed to report, while 57.27 per cent of the whole in number, possessed but 24.55 per cent of the total capital, and turned out but 30.79 per cent of the total product. The serious discrepancies in these percentages are very indicative, and they should have at once arrested his attention.

In the first place it is evident that final results might be considerably affected if it were found on examination that the more profitable industries were more or less fully reported than the less profitable ones. Assuming that in each industry the percentage of "Excess of Selling Price over Cost of Production" was the same in both reported and unreported establishments, I have carefully figured out this excess for "Not answering" establishments, exclusive of Print Works, and I find it to be $32,644,693, which is 15.94 per cent of the $204,772,141 product of these establishments. The 9,948 establishments (Print Works excluded) give an average, according to the Report, of only 14.21 per cent. This difference of 1.73 per cent on the 31.08 per cent of total Selling Price received by the "Not answering" establishments makes an addition of 0.54 per cent to the general average of the "Excess of Selling Price above Cost of Production." This difference seems small when expressed in percentages, but it is by no means an inconsiderable sum, amounting as it does to $3,567,268, or about $100 annually to each partner and stockholder in manufacturing enterprises. The sum is indeed large enough, if it were so applied, to come within a small fraction of paying all taxes levied upon manufacturers, a burden that to them, at least, does not appear inconsiderable.

We have had but little difficulty in ascertaining that, even if the rate of profit is, as the Report assumes, no greater in the unreported than in the reporting establishments, a by no means inconsiderable modification of his final result is necessitated when all establishments are brought into the computation. But are there any indications of difference in the rates of profit enjoyed by the two classes of establishments? Surely, the discrepancies in percentages, to which I have already called the reader's attention, are calculated to excite suspicion of Mr. Wadlin's somewhat hasty assumption of the equality of their returns.

Of the few large establishments which failed to report it may safely be affirmed that some feared to invite competition by divulging the extent of their gains, and others, that their credit would suffer from an acknowl-

edgment of their losses. How far these antagonistic influences balanced each other there are no means of determining. Nor is it very important that it should be known, as the great mass of these establishments were small ones, not interrogated on account of their insignificance, or that failed to reply because their owners considered their own influence on the general result to be inappreciable, or because they were not especially interested in statistical inquiries. Now, what points of difference are there in the character of small as compared with large establishments, on which *à priori* deductions as to their respective rates of profit can be based?

1. There unquestionably exists in the popular mind a misty sort of idea that the rate of profit is greatest in the larger establishments. But is this so? Is it not more likely that the law of diminishing returns applies here as well as elsewhere throughout all industry? Ask any man who has established a successful business whether his greatest rate of legitimate return was not enjoyed in its early years, before the capital employed had expanded to its present proportions. No one, who doubles the capital he employs in any special business enterprise, expects to fully double the return, unless there are peculiar circumstances in the case which put a capital below a certain size at special disadvantage. Even here, after that size is attained, further "doses of capital" do not produce quite their proportion of effect in profits. Any business man will tell you that it is comparatively common, and easy, to procure returns of 20, 30, 40, or even 50 per cent from small investments, but that such returns are never realized from large enterprises, unless they are monopolies. The real state of affairs is somewhat disguised by the fact that what is asserted above is only true of legitimate business ventures, such as we have to do with in our analysis. The truth is exactly the other way in speculative matters. In that troublous sea the small fish are the natural subsistence of the larger. And it will be found, I think, in almost every case, when a man's rate of profit increases with the growth of his capital, or even holds its own with it, that it is because his gains are largely speculative.

2. We find these smaller establishments turning out almost invariably a large product in proportion to their capital. This is because they are not so well able to anticipate their wants in raw material, or to hold their completed product for higher prices. My personal impression, founded upon opportunities for observation somewhat better than common, is very decided that, in the long run, and on the average, manufacturers lose rather than gain by anticipating their wants and by refusing to meet the market. If my impression is a correct one, this would point to a decided advantage possessed by small establishments. But even if nothing is lost by large manufacturers in this manner, the capital employed by them in holding large quantities of raw material and finished goods cannot earn nearly so large a rate of return as the balance of the capital

employed in their business, so that, other things being equal, the average rate of return to large capitals would be lessened by this cause. On the other hand, it is evident that a business with a large output in proportion to the capital engaged needs a smaller percentage of "Excess of Selling Price above Cost of Production" to yield the same percentage of return on capital. The presumption is therefore against the unreported industries showing more of such excess than the reported ones, so far as this last-mentioned influence extends.

3. There can be but very few corporations among the 13,387 unreported establishments, and the partners in small private firms enjoy too limited incomes for many of them to be personally idle. Unsalaried efforts must then count for vastly more than in the 9,948 reporting establishments. This, of course, would go to increase Excess of Selling Price and Net Profits as figured by Mr. Wadlin.

On the whole, we are entitled, I think, to expect from *à priori* reasons that the unreported establishments should show a considerably larger "Excess of Selling Price above Cost of Production" than those which have been tabulated in the Report. But have we no resource in the data laid before us for determining statistically what the difference probably is? It would seem as if we could put some reliance in the results of a comparison of those reported industries among the sixty then under analysis, in which the average capital of each establishment was small with that of all the industries taken together, because the business of these industries of small capital, taken as a whole, is very similar to the business of the unreported establishments, taken as a whole, in the very points in which we have found the latter to differ from the reported establishments, taken as a whole. We will not, of course, be able to get any very definite idea as to the exact figures for these 13,387 unreported establishments, but we should arrive at very certain knowledge as to the direction in which they vary from the figures of the 9,948 establishments, and some inkling as to the amount of the variance. Although the criticisms advanced against the final table of the Report apply with equal force to the subsidiary tables, of which the final one is a condensation, their rectification would involve more time and labor than I am able to command, even were such rectification essential to my present purpose. The items that constitute Cost of Production in the tables, although as we have seen they are not exactly the items which really enter into cost, are yet, when taken separately, all correctly obtained from his original data. From this it follows that his "Excess of Selling Price above Cost of Production" is also a positively determined sum. It is perfectly legitimate and safe, therefore, to first ascertain how this excess in the small establishments compares with the same excess in the large, as exactly the same differences will necessarily appear both in his "Net Profits," and in mine.

Probably the "natural man" will be inclined to cast aside as worthless

TABULATION OF INDUSTRIES AVERAGING $20,000 CAPITAL OR LESS PER ESTABLISHMENT.

Name of Industry.	Number of Establishments.	Average Capital.	Total Capital.	Total Product.	Percentage of Excess of Selling Price to Total Product.	Sum Total of Excess of Selling Price.	Percentage of Net Profits to Capital.	Total Sum of Net Profits.
Artificial teeth and dental work	120	$633	$75,988	$172,587	51.67	$89,126	97.90	$74,392
Boxes, paper and wooden	117	15,577	1,822,219	2,879,347	15.93	438,480	12.85	234,055
Brooms, brushes, and mops	35	13,316	466,043	1,054,011	16.61	175,071	22.18	103,368
Buildings (including concrete walks, etc.)	1,227	3,926	4,818,926	16,303,245	18.31	3,085,124	40.54	1,953,592
Burial cases, caskets, coffins, etc	31	8,807	273,015	472,086	13.91	65,767	11.78	32,261
Carriages and wagons	496	6,910	3,427,282	5,027,457	21.07	1,062,285	19.67	674,146
Charcoal and kindlers (including fire works and matches)	4	4,832	19,350	68,912	60.00	41,347	190.38	32,840
Clothing	826	7,981	6,592,183	15,497,247	21.21	3,286,956	33.05	2,178,716
Drugs and medicine (including perfumes, etc.)	156	4,551	709,929	1,631,564	39.71	647,894	74.65	529,962
Earthen, plaster, and stone ware	24	16,965	407,166	493,258	29.44	145,215	25.89	105,416
Electroplating (including jewelry burnishing, etc.)	31	3,116	99,595	224,457	33.28	74,699	56.79	56,560
Fancy articles (including fine arts, etc.)	16	2,766	44,260	77,263	41.08	31,740	57.18	25,308
Food preparations (including salt)	684	19,194	13,128,503	47,504,946	11.72	5,567,580	20.40	2,678,215
Hair work, animal and human	22	7,959	175,091	352,554	7.40	26,089	1.00	1,751
Ink, mucilage, and paste	12	5,935	71,225	109,798	30.88	33,906	34.92	24,872
Liquors and beverages (not spirituous)	25	7,296	182,387	245,846	32.48	79,851	31.39	57,251
Needles and patterns	37	1,872	70,005	175,891	37.93	66,716	75.48	52,849
Photographs and photographic material	115	3,155	362,869	560,894	34.63	194,238	39.84	144,517
Printing, publishing, and book binding	399	15,247	6,083,542	10,504,447	32.20	3,382,432	34.02	2,378,594
Scientific instruments, etc	32	18,870	603,814	827,608	18.00	148,969	12.29	74,209
Ship-building (including awnings, etc.)	125	2,914	364,380	897,931	25.92	232,744	47.00	171,259
Sporting and athletic goods	13	8,183	106,380	176,680	22.94	40,530	24.79	26,372
Stone	193	14,068	2,713,104	4,076,233	20.89	851,525	20.11	545,605
Tallow candles, soap, and grease	73	14,278	1,042,262	2,273,505	14.88	338,298	17.64	183,855
Trunks and valises	12	5,347	64,160	161,055	20.96	33,757	34.93	22,451
Wooden goods	260	8,701	2,262,263	3,160,771	20.38	643,165	16.71	378,024
Totals for 26 industries, with smallest capital per establishment	5,085	9,220	46,885,941	114,929,593	18.81	20,783,504	26.74	12,537,774
Remaining 37 industries (print works excluded)	4,863	65,199	317,060,987	339,051,692	12.90	43,727,237	3.43	10,887,660
Totals for 63 industries (print works excluded)	9,948	32,566	363,964,928	453,981,285	14.21	64,510,741	6.44	23,425,434
Totals for 24 industries with smallest capital per establishment	4,369	7,588	33,153,624	66,597,039	22.60	15,066,955	29.52	9,785,350
Totals of 39 industries (print works excluded)	5,579	59,102	330,793,304	387,384,246	12.76	49,443,886	4.16	13,640,084
Totals of establishments not answering	13,387	8,998	120,456,039	204,772,141	.....	.....	....	.....

the original data which yield such results as the above. In this, however, he would act somewhat hastily, as the anomalies which appear are very largely due to Mr. Wadlin's methods of calculating "Net Profits," though it must be confessed that some grounds for legitimate suspicion of the correctness of his data would remain even after his calculations of "Net Profit" were corrected. The separation of the business of the smaller from that of the larger establishments given in the above table proves, however, beyond question, that Mr. Wadlin's methods of handling the data must be very defective, and the estimates of unknown quantities very erroneous, if a fair degree of accuracy be allowed to his original data.

No matter what the figures prove, it is, of course, the height of folly to imagine that the rate of profit in business conducted in small is about seven times the rate obtained in business conducted in large establishments. If, however, we discard from the table above the two last columns, its other figures are not so intrinsically impossible. To illustrate, if we were comparing a number of percentages varying between 51 per cent and 75 per cent, the variance would not be greater, perhaps, than the circumstances of the particular case would lead us to expect. But if, led thereto by arbitrary estimates and erroneous calculations, we should deduct 50 from all our percentages, they would then range from 1 per cent to 25 per cent, and we would be at once warned of error by an irregularity in our results, far beyond what could really occur in the phenomena. It is owing to a process, similar to this, that Mr. Wadlin's errors become focussed, as it were, in "Net Profits," and consequently these last two columns can be discarded as palpably erroneous, without much impairment of the credit to be given to the results in the preceding columns. It is not at all impossible, or even improbable, that what is called "Excess of Selling Price above Cost of Production," with a general average of 14.21 per cent for all industries, should have an average of 18.81 per cent to 22 60 per cent in industries conducted in small establishments, and an average of 12.76 to 12.90 per cent in those conducted in large establishments. As Mr. Wadlin does not indulge himself in any estimates in arriving at this percentage of 14.21 (for 63 industries), it is absolutely in accordance with the original data, as is the percentage of 22.60 for the 24 smaller, and the percentage of 18.81 for the 26 smallest industries. If these percentages are wrong the defect is in the original data, which we have assumed to be correct for the purposes of this criticism.

My object in drawing up this table was to obtain a comparison between the business of the 13,387 establishments not answering and the business of such of the answering establishments as most nearly resembled them in size and character. Unfortunately, an industry is found just within the line arbitrarily chosen, so extensive, and so peculiar, as to render the results obtained almost useless for this special comparison. I refer, of

course, to "Food Preparations" in which the average capital is within $807 of being large enough to exclude it. The anomalous feature of this industry, which vitiates the tables in which it is included, is the output which, instead of being 25 per cent in excess of the capital (the general average for all reported industries), is so enormous that it is actually 262 per cent in excess of capital. I have already pointed out that the larger the output the smaller is the percentage of it required to yield a satisfactory profit to the capital engaged. As the effects of this law, while this industry is almost as profitable as the other twenty-five, the percentage of "Excess of Selling Price over Cost of Production" is very small. And as "Food Preparations" is by far the largest of the 26 industries considered, so large, indeed, that its output is more than 41 per cent of the whole, the results obtained from the 26 industries are not at all comparable with the facts known about the business of the 13,387 establishments not answering. If, however, instead of selecting $20,000 capital as our limit, we take $17,996 (twice the average capital of the 13,387 establishments), taking, that is, the 24 smallest capitalizations instead of 26 (omitting this industry of "Food Preparations," together with the unimportant industry of "Scientific Instruments"), we obtain results bearing a fairly close resemblance to the facts known about the business of the 13,387 establishments. In these 24 industries the capitalization averages $7,588 against $8,998. This would lead us to anticipate a somewhat greater "Excess of Selling Price above Cost of Production." But, on the other hand, the output as compared with capital is proportionately greater, being about 100 per cent in the one case, and about 70 per cent in the other, and this circumstance would naturally lead to a somewhat lower "Excess of Selling Price." In the absence of positive data, these antagonistic tendencies seem to fairly balance each other, I have therefore assumed this to be the case and have constructed my tables accordingly.

I am perfectly aware that I have obtained this percentage by the very doubtful expediency of analogy, always a dangerous reliance, and always an objectionable one when more positive information is obtainable. But it must be borne in mind that I do not oppose this analogy to any positively known facts. There are none such to be found in the original data, or elsewhere, that I know of. What it does seek to supplant is a mere assumption on the part of the Report for the validity of which he does not claim to possess any proof at all. An analogy is at least a good deal better than a mere guess. And especially is this so when the analogy is as strong as it is in this case, and when its results are in agreement with what we had a right to expect from *à priori* considerations.

Assuming, then, as highly probable, and in lack of any better information, that the average of "Excess of Selling Price," etc., was 22.60 per cent in the 13,387 establishments not answering, against an average of 14.21 per cent in the 9,948 establishments that reported in full, we would

have an average of 16.82 per cent for the whole 23,335 establishments whose business we are attempting to analyze.

How this difference of 2.61 per cent of Selling Price is to be divided among the items of what is considered in the Massachusetts Report as Cost of Production is a matter which we have no means of determining accurately. How it is distributed makes no difference at all in the percentage of Selling Price, obtained by employers and capitalists, but it does affect the percentage obtained by labor, and, through this, it affects the proportions in which the added value is divided between labor and capital. An examination of my tables will show that 1.02 per cent of the selling price (constituting nearly two-fifths of this item) is accounted for by the labor of principals, so that after all only 1.59 per cent of this 2.61 per cent is really problematical. This 1.02 per cent is, of course, a saving in wages to the members of private firms. It is also fair to suppose that of the remaining 1.59 per cent, as well as of the 0.54 per cent of Selling Price noticed in the first part of this Appendix, some, though a minor part, was due to a saving of wages, and that the balance was due to the lessening of other items of cost. Adding the two items together we have 3.15 per cent, to allow for which, I have, in accordance with the above considerations, deducted half from wages and half from other items of employer's cost. And I believe that under the circumstances the division is as nearly correct as our means of computing it will allow.

CLASSIFICATION OF TRADE STATISTICS.

The classification of statistics largely determines their usefulness to the general student. The results must be accepted as they come from the statistician, for the task of reclassifying is practically beyond the power of all who have not at command a well equipped statistical force.

It cannot be expected that any one plan will meet every requirement. But there are certain general principles to which all schemes of classification should conform. Homogeneity, uniformity, simplicity, and adequacy may fairly be said to be universal requirements.

The classification of Domestic Exports and of Imports, adopted by the Bureau of Statistics of the Treasury Department, is as follows:

Exports of Domestic Merchandise.

Products of Agriculture.

Products of Mining, including crude mineral oils.

Products of the Forest.

Products of the Fisheries.

Products other than of Agriculture, etc.

Products of Domestic Manufacture.

Imports of Merchandise.

Articles of food, and animals.

Articles in a crude condition which enter into the various processes of domestic industry.

Articles wholly or partially manufactured for use as materials in the manufactures and the mechanic arts.

Articles manufactured, ready for consumption.

Articles of voluntary use, luxuries, etc.

Viewed in the light of the principles above mentioned, this classification is deficient in several respects.

Homogeneity requires that the same basis of classification shall be observed throughout. This is the first and most fundamental requirement. The plan adopted should be sufficiently inclusive and exclusive; no item would then be capable of classification under more than one division in a given investigation. Conformity to this principle is often difficult, yet it should be sought not the less, for the extent to which it is realized determines the integrity of the work.

The basis adopted for exports is in part "kind of commodity,"

and in part "stage of production." On the basis of "kind of commodity," there appear products of agriculture, products of mining, etc., while on the basis of "stage of production" certain products are given as manufactured articles. The demands of homogeneity are evidently not met here, for the same article may be a product of agriculture, or of mining, etc., and at the same time be manufactured.

It is manifestly the intention of the Treasury Department* that, in a comparison of exports of manufactures with those of raw materials, the articles classed as products of domestic manufacture should be compared with the total of all the other groups. Accepting this view, the classification is still open to criticism. There does not appear to be a uniform principle for deciding between the manufactured and other articles. Flour and all grist mill products, canned fruits, cottonseed and linseed oils, glucose, glue, all provisions, and wine are placed as products of agriculture; saw-mill products are products of the forest; canned and cured fish are products of the fisheries; all of which it appears are to be considered as manufactured in comparisons involving manufactured and crude materials. In the list of manufactures will be found bricks, lime and cement, fertilizers, pig-iron, ground coffee and cocoa, sole leather, malt liquors, ground spices, refined mineral oil, and other similar products. It must be granted that it is extremely difficult to make a scientific distinction between raw materials and manufactured products; but it is not clear by what criterion grist mill products, canned goods, cottonseed and linseed oils, and wine belong to the former, while ground spices, ground coffee and cocoa, fertilizers, lime and cement, bricks, refined mineral oil, and malt liquors belong to the latter.

In the classification of imports, the basis is a combination of "wants supplied," and "stage of production." Certain imports are classed as food products, others as luxuries, while others appear as crude, partially manufactured, or manufactured. The inconsistencies here are even greater than in the classification of exports. Among "articles of voluntary use, luxuries, etc.," as distinct from "manufactured articles ready for consumption," are art works, embroideries, laces, manufactures of silk, manufactures of tobacco, and wine. If it be said that these should be placed as manufactured articles in a comparison between total crude and total manufactured, it will not even

* See note p. clii. *Report on Commerce and Navigation of the United States, 1891.*

then appear why wine should be classed with malt liquors as a manufactured product in imports, while in exports it stands as a product of agriculture. Enough has been said, I think, to make it apparent that the present classification of trade statistics fails to conform to the principle of homogeneity. Surely, an article may be both food product and crude material, or manufactured, both manufactured and food product or luxury.

Uniformity requires the employment of the same plan of classification in similar investigations. This principle is essential to comparison of results, and until such comparison is made any statistical result is meaningless. It is of but little importance to ascertain the population of any district, the death rate in any locality, or the volume and character of trade, unless these facts may be placed along side others of a similar nature to learn whether the given result be large or small, normal or abnormal, and to arrive at conclusions concerning causes and tendencies.

In the case of exports and imports no comparison is possible except of totals. There are exports of agriculture, but no imports of this class. There are imports of food products, but no exports to correspond. The same is true of every class in the scheme used.

The principles of simplicity and of adequacy require, on the one hand, that the classification shall not be carried to an extreme, and, on the other, that it be sufficiently minute. If statistics are to be available for practical uses, the salient facts must not be concealed by a mass of details; and, at the same time, the classes must be sufficiently differentiated to bring out clearly the important facts. "The general rule to follow as regards detailed statistics is to present in detail what the reader or student may reasonably wish to use in detail, or may wish to combine in some way different from the totals or recapitulations given with the detail." *

These principles of simplicity and adequacy are satisfactorily observed in the statistics of trade, with certain minor exceptions that would disappear if the classification were made homogeneous and uniform.

From the classification adopted by the Bureau of Statistics it would seem that the information most desired concerns "kind of product," and "stage of production." Does trade consist more largely of crude

*Charles F. Pidgin, *Practical Statistics*, p. 155.

materials, or of manufactured products? In what proportion do products of agriculture, of the forest, of the fisheries, or of mining enter? Without doing violence to the scheme already in use, it is believed that the following plan will give the information in an improved form.

FOREIGN TRADE.

EXPORTS.

DOMESTIC.

Raw Materials.	*Manufactures.*
Agriculture.	Agriculture.
Fishery.	Fishery.
Forest.	Forest.
Mineral.	Mineral.
Miscellaneous.	Miscellaneous.

FOREIGN.

Raw Materials.	*Manufactures.*
Agriculture.	Agriculture.
Fishery.	Fishery.
Forest.	Forest.
Mineral.	Mineral.
Miscellaneous.	Miscellaneous.

IMPORTS.

Raw Materials.	*Manufactures.*
Agriculture.	Agriculture.
Fishery.	Fishery.
Forest.	Forest.
Mineral.	Mineral.
Miscellaneous.	Miscellaneous.

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PROPOSED STATISTICAL LEGISLATION.

The bill of greatest interest to statisticians which has been introduced in the Fifty-Second Congress is the measure providing for a permanent organization of the Census Bureau (S. 690). The bill was drafted by the Superintendent of the Census, and is the outcome of a resolution passed by the Senate, February 16, 1891, instructing the Secretary of the Interior to report on the advisability of making the Census Bureau permanent. The main features of the bill may be briefly rehearsed. Section 1 reads —

> "That a census of the population, wealth, and industry of the United States shall be taken as of the date of October first, nineteen hundred, and once in every ten years thereafter, as of the said date of October first: and that there shall be a periodic collection of vital and social statistics, and of statistics of agriculture, manufacture, mining, fisheries, churches, education, finance, transportation, and insurance, to be made as hereinafter provided."

It will be observed that the proposed law changes the census day from June to October. The date is much more satisfactory than the present date. European countries, as a rule, take a midwinter date, but it is believed that the date here chosen would be better than a later date, especially in the northern sections of the country with their rigid winter weather. Moreover, the date avoids the difficulties caused by summer migrations quite as well as if later in the winter.

The section quoted indicates also the scope of the inquiries to be carried on by the Bureau, and has therefore been given in full. The subsequent sections of the bill relate to the details of administration, and may be passed over more rapidly. The proposed Bureau remains in the Interior Department, and is to be organized as soon as practicable. The Superintendent of the Census, at a salary of $6000, is given the assistance of a chief clerk, a disbursing clerk, and five chiefs of division, "who must be statistical experts," at $2500 annually, besides the necessary clerical force. It may be noted here that the expenditure of the office, for the ordinary years, is estimated at $200,000, exclusive of printing. Many sections of the bill relate to the manner in which the decennial census shall be taken, and substantially re-enact the provisions of the present law. Among the new features are provisions that enumerators receive a per diem compensation of three dollars for a day of ten hours, instead of the pre-

vailing system of payment according to the number of schedules returned, and, further, the threatening with fines of *all* persons in whatever capacity who refuse to answer the questions contained in the schedules, of whatever description they may be. Under the proposed law enumerators are to be appointed as heretofore by the supervisors of districts. A change, however, is to be noted in the appointment of clerks. At the inauguration of the Bureau the clerks are to be selected by the secretary from the "trained clerks and experts of the Eleventh Census, who shall have served therein satisfactorily for a continuous period of at least two years, and who shall have received from the Superintendent of the Census a certificate to that effect." All other appointments are to be made under the Civil Service rules.

The bill also provides that should any state take a census of inhabitants in the year mid-way between the decennial censuses according to forms and schedules approved by the Superintendent of the Census, the United States shall, upon a requisition from the state in question, pay one-half of the certified cost of such census.

It cannot be our object here to discuss the bill section for section, and it is believed that in the foregoing summary the main points of the proposed measure are set forth. To understand the bill thoroughly we must go back to the report on which it is based.

The crucial point of the bill is the proposed permanence of the Census Bureau. The arguments for such an organization have been repeatedly brought to public notice. Briefly, the advantages of a permanent bureau may be summarized as follows: The saving of time now lost in training clerks and chiefs of divisions; the preservation of essential records; and, finally, a more complete preparation for the work of the enumeration. These arguments find forcible expression in the report of Superintendent Porter. These general considerations are sufficiently familiar to statisticians, but the report gains its vigor from the wealth of specific illustration which it gives. Mr. Porter pursues the ingenious method of reviewing, division by division, the work of his bureau, and showing, step by step, where a permanent organization would benefit the service. It cannot be our purpose to follow him through his arguments, but a few illustrations will suffice. Under the present system the amount of time spent in supervising appointments is unduly large. The temporary character of the work precludes to a large extent the employment of Civil Service clerks, and thus necessitates this machinery.

Consider for a moment the training of chiefs of divisions and clerks. All who are familiar with statistical work know that every statistician learns through his own blunders rather than through those of other people. Now, our present system requires that such blunders must be made and such experience gained once in ten years, unless, indeed, the Superintendent of the Census is always as fortunate as Mr. Porter has been in securing the services of chiefs of division who were employed in a like capacity in previous years. It is needless to say that this cannot always be the case.

Again, consider the item of clerks. Not long ago it was stated in the House of Representatives that the clerks in the division of farms, homes, and mortgages "did not know the difference between a mortgage and a bale of hay." The statement was promptly characterized as an exaggeration, but the mere suggestion points out the difficulties of dealing with an intricate subject with raw clerks. While the greatest difficulty in statistical work is just as apt to come from persons who know too much as from those who know too little, ignorance may be too dense for efficient work. In the work of the division mentioned some general knowledge of the nature of a mortgage is required; in the division of vital statistics some knowledge of the nomenclature of disease; in that of crime some knowledge of the names of crimes; and, in short, in each division, as Mr. Porter clearly shows, there is a certain minimum of information which is the prerequisite of good work. It is not meant that this is more than ordinary clerks can compass, but that this work must be taught a fresh set of clerks once in ten years.

Another gain from a permanent Bureau made prominent in the report is the preservation of records. A vast amount of accessory material, such as lists necessarily unpublished, is collected by the various divisions to facilitate their work. Its preservation and completion from time to time would be a great economy. The reader will find some very striking illustrations to this text in the report of Mr. Porter. He mentions the following lists: Minor civil subdivisions of the country. officers of religious bodies, jails and similar institutions, municipal officers, recording officers, manufacturers, mining operators. transportation companies. One can readily see that it is no little labor to construct these lists, bnt a comparatively simple one to keep them up to date when once made. At present each list must be made anew once in ten years.

"In 1880 the Census law was not passed until March 3, 1879, and further legislation affecting the work of enumeration of population was had as late as April 20, 1880. In 1890 the census law was not approved until March 1, 1889, and legislation making it necessary to insert additional inquiries on the population schedule was approved as late as February 22, 1890, about three months before the enumeration began. It therefore became necessary to print 20,000,000 schedules and distribute them throughout the country in ninety days."

With these facts Mr. Porter describes one of the greatest defects of the present antiquated system of carrying on the census. Such an important work as the census needs the most careful and well considered preparation. We have at present no guarantee that it will receive that attention, and it is a gross injustice to the Superintendent of the Census to expect a perfect organization of his work in the brief time usually allotted to it.

To his report, of which the above aims to give the essence rather than an abstract, Mr. Porter has added communications from statisticians, commercial bodies, agricultural commissioners, state boards of health, labor bureaus, churchmen, and alienists. It contains, further, the draft of the bill discussed above, a chronological review of census legislation, the census acts of 1790, 1850, and 1879, and the forms of schedules used in each census from the First to the Eleventh.

The communications from the sources above named are practically unaminous in favor of the proposed permanent bureau. The arguments stated are much the same as those discussed, save that in each case the expression of opinion takes some color from the point of view of each writer.

Among the incidental advantages of permanency in the Census Bureau, some of the writers dwell very properly on the collection of a statistical library. This is something which statistical students would greatly appreciate, and which at present is lacking at Washington. If no where else, centralization of statistical work is very desirable in a library.

In general these communications subordinate the question of organization to that of function. The commercial bodies approve the plan and desire more complete and more frequent information on questions of commerce, manufacture, transportation. The agricultural organs believe that a permanent census bureau could do much for obtaining accurate agricultural statistics. The officers of state boards of health

believe that vital statistics could be improved through the direct or indirect agency of a permanent bureau. Officers of insane asylums hold that a permanent bureau could contribute greatly to a more perfect knowledge of the insane in this country.

Much the same tendency is to be noted in the letters from statisticians. The question of organization, however, receives more attention from them. The European statisticians, who know no other method, approve completely the idea of a permanent bureau, and give some account of the form of organization in their respective countries.

The question, what shall be the scope of the proposed bureau, is one partly of function and partly of organization,— a question of function as to the extent of the inquiries, a question of organization in its relation to the other statistical work of the government. It is the weak point of the report and the bill that this question is avoided. There can be little doubt that the efficiency of the proposed bureau is largely dependent on the character of its work in the years intervening between the decennial censuses. It would seem advisable that that work should be clear and well defined. It would seem essential that if the proposed bureau is to mould our future statistics, it should occupy a commanding position in the statistical work of the government. Furnished with an appropriation as estimated in the report, only slightly in excess of that now enjoyed by the Department of Labor, and without clearly defined relation to the statistical work now going on in that department, and in the Treasury, State, and Agricultural departments, in the Bureau of Education, the Geological Survey, the Fish Commission, and the Interstate Commerce Commission,* it would seem that the proposed bureau could not fill the role which might naturally be expected.

It will be seen from the bill that the scope of the Bureau's work is as wide as that of the Census. The superintendent speaks of possible work in Agriculture, Mining, Fisheries, Transportation, and Education. This must clearly conflict with the present bureaus at work, and it seems unfortunate that no attempt has been made to fix the relations between them. The question is a delicate one, and it is easily understood why it should be avoided. But to our view it is a question which must be met in the long run. Some of the communi-

*See Willoughby, Statistical Publications of the United States Government, *Annals of the American Academy of Political and Social Science*, vol. II, p. 236 (Sept., 1891).

cations speak of the question in a tentative way, and suggest as possible solutions either the centralized bureau or the commission plan. Either plan would be an improvement, would give a higher character to the work as a whole, and would render duplication impossible. The advantages of each system are familiar to statisticians. The reorganization of the statistical work of the government seems a prerequisite of any advance through a permanent census bureau, and it is much to be regretted that the report and bill under discussion do not grapple with this question.

A bill (S. 1201) of purely administrative import has been introduced as an amendment to the act to provide for taking the Eleventh Census. It extends the penalties for a refusal to give information to census inquiries to companies, firms, and persons engaged in any productive industry.

No special collection of wages will take place in the Eleventh Census apart from the treatment of the subject under the various industries. A resolution (S. R. 20) has been introduced into the Senate contemplating the continuation of Volume XX of the Tenth Census. It authorizes the Superintendent of the Census to employ Mr. Jos. D. Weeks, of Pittsburgh, to do this work, and appropriates fifty thousand dollars for the purpose.

An echo of the Farmers' Alliance is found in a bill (S. 670) introduced by Senator Peffer (by request). It provides for a special census, asking of persons, firms, associations, and incorporations the value of property owned, the amount of debt and interest on the same, the amount of "use-money paid for use of rooms, buildings, grounds, or anything else." The intent of the act is mentioned "that the people may know how to legislate on the money question." A curious feature is a provision for the publication of the names of all persons who refuse to answer the questions.

ROLAND P. FALKNER.

REVIEWS AND NOTICES.

STUDIES IN JEWISH STATISTICS.

Studies in Jewish Statistics, social, vital, and anthropometric. By Joseph Jacobs. London, 1891. Pp. 59, lxix. 13.

Since many theories concerning the Jews are based upon insufficient or inaccurate data, the author has attempted to bring together in this little book "a larger quantity of statistical material than is elsewhere available" in regard to this race. On the subject of consanguineous marriages the writer concludes that about 7½ per cent of all Jewish marriages in England are between first cousins, a considerably greater proportion than Mr. G. H. Darwin calculated as taking place among the English in general, and probably a larger percentage than would hold true of Jews on the continent. Apparently, though not certainly, such marriages are more fertile than others; but Mr. Jacobs does not think that it is at all established that the offspring are unusually subject to physical or mental ills.

"One of the most firmly rooted ideas in the popular mind is that all Jews are rich." "Perhaps one of the causes of the idea has been that the Jewish poor have never been a burden to the general population, but have been entirely supported by the Jews themselves." The Jews of Asia, Africa, and Eastern Europe are poor; it is only in Western Europe and America that the wealthier are to be found. Confining the attention to the London Jews, it is estimated that 14.6 per cent have incomes averaging £367, 42.2 per cent £54, 19.6 per cent £26, and 23.6 per cent £12. During the year specially investigated it appeared that about one in four had been aided to a greater or less extent by their co-religionists, though the number of actual paupers was only one-half of 1 per cent. A few were rich, the many poor,— no middle class.

A much larger proportion of Jews than of the general population live in cities, and it is therefore impossible, or at least unfair, to attempt a comparison of occupations as between them and other races. Religious considerations and legal restrictions have had much to do with drawing the Israelites into the larger towns. It would be an

interesting question to determine to what extent their disproportionate congregation in cities is responsible for "their larger proportion of mentally and physically afflicted, their smaller bodily size, and the general 'movement' of the Jewish population." Commerce seems to attract about three times as great a percentage of Jews as of Christians, though it should also be added that the handicrafts claim a much larger proportion than is conceded by anti-Semitic orators and pamphleteers. In law, medicine, and literature on the continent, but not in England, Jewish names figure much oftener than in the general population, this being especially true of Austria-Hungary and Prussia; and in the universities also their proportion is high.

From a comparison of statistics of a considerable number of countries it appears that Jews marry younger, and, at the same time, less frequently than Christians, have a smaller birth rate according to population, but larger according to marriages; a smaller death rate, particularly under five years of age, and perhaps a slightly greater longevity. Jews are shorter and narrower than other European races, have darker hair and eyes, and, strangely, a larger percentage of red-haired persons.

There is much other interesting and suggestive matter in this work, to which it will be impossible to call attention. Those interested are therefore urged to refer directly to Mr. Jacobs's temperate and unprejudiced discussion.

CHARLES F. A. CURRIER.

THE WOOL BOOK.

A Statistical Manual Containing the Latest Official Data of the Production, Movement, and Consumption of Wool in all Countries. Compiled for the National Association of Wool Manufacturers, by S. N. D. North, Secretary, Boston, 1892.

This little volume is another illustration of the increasing tendency in all large lines of business to predicate enterprise upon authenticated statistical data. This has long been true in cotton, in iron and steel, and in other lines. The present publication is, we believe, the first attempt in any country to supply a commercial handbook containing all the attainable data regarding the world's production and consumption of wool.

There were great difficulties to be overcome in its compilation on account of the different methods of ascertaining and recording wool production and sales, the conflicting official statements, and the meagerness of data from distant and semi-barbarous countries that supply a large portion of the world's clip. The compiler has been careful to state the authority for his figures in every case; and where they conflict he has made no effort to reconcile them. A striking illustration of these discrepancies is found in the different totals of the number of sheep in the United States, given by the Census office and the Department of Agriculture, a difference which warns us again that it does not follow because statistics are labelled "official" and duly certified that they can be implicitly relied upon. This volume shows that for years the official estimate, by the Department of Agriculture, of the total wool clip of the United States has been from 20,000,000 to 30,000,000 pounds less than the commercial estimates; and it is significant that the commercial estimate should be the one generally accepted in the trade as nearest the fact.

The reader of *The Wool Book* will be impressed by the fact that the English have much closer methods of calculating their annual wool supply and consumption than our own people; that the French are also far behind the English in this respect, and the Germans far behind the French. These four countries are recognized as the great wool manufacturing nations, Great Britain standing first, France and the United States following close behind in the order named, and Germany not far behind either. In these four countries two-thirds of the world's wool product are worked up.

The Wool Book makes an original estimate of the total wool clip of the world, which will attract attention because it is larger than any before given. It is founded upon the table of F. X. von Neumann-Spallart, of Stutgart, as published in the *Ubersichten der Welk-Wirthschaft*, where the annual wool supply is figured at 1,983,396,000 lbs., and upon the London Board of Trade estimates, which place the world's wool clip at 1,950,000,000 in 1890. The present estimate puts the total at 2,456,773,000; and as the estimated production of each country is given in detail, there is opportunity for those who think the total too large to show where any error has been made.

We may conclude this notice by calling attention to the great aid which is given to statistical science and investigation by publications for purely commercial purposes, of which this book is a type. Col-

lected within the compact space of a hundred odd pages, carefully indexed and arranged, we have here all the data required for the close study of one of the greatest of our economic problems, much of it drawn from sources not ordinarily available to students of statistics and of political economy. Students of that problem, in any of its aspects, may save themselves many hours of wearisome search in libraries by consulting its pages.

DIVORCE STATISTICS IN THE UNITED STATES.

The following paragraphs, from the last annual Report of Rev. Dr. S. W. Dike, Secretary of the National Divorce Reform League, for the year ending December 31, 1891, indicate the recent development of statistics of divorce.

Some will remember that we have pointed out the great aid the census might have given in determining what proportion of the 20 per cent of the divorces of the United States, which are obtained in states other than the one in which the marriage took place, belong to those sought by non-residents. Had the population, under the census of 1880, been classified both by conjugal condition and place of birth, instead of the latter alone, Mr. Wright could have shown this. I laid this need before the Superintendent of the present census, and he assures me that this work shall be done for 1890, and perhaps for the previous census from the original schedules. This will enable us to compare, for example, the number of married persons in California who were born in New York with the number divorced in California who had been married in New York, as the latter fact was brought out in the report of Mr. Wright. In this way a reasonably good estimate can be made of the extent of migration expressly for easy divorce.

STATE REGISTRATION REPORTS.

The importance of extending a common system of the registration of marriages and divorces over the country was presented in our Report for 1890. It was especially urged that every license for a second marriage should give the previous conjugal condition, whether single, widowed or divorced, as well as the date and place of the dissolution of the former marriage. The sociological value of these facts would be great; and so would their practical uses in rendering biga-

mies more difficult, and in settling the vexed question as to the influence of a desire for re-marriage upon the increase of divorces. Connecticut for two years reports the number of divorced persons married each year. In 1889 there were 286 such,— 135 men and 151 women,— which is a little above one-third the number divorced in the year. In 1890 there were 477 divorces granted, or 954 individuals divorced; and there were 350 divorced persons — this year 207 women and 143 men — who married again during the year. An extended induction along this line should be possible. Guesses based on mere observation are untrustworthy guides in legislation or social reform.

A critical study of the Report of Mr. Wright, especially for its light upon the extent to which legislation operates to increase or decrease Divorce, the work of a young man of much promise, and written as a thesis for the degree of Doctor of Philosophy, was published by Columbia College as the first of its series of issues on Social Problems. But though an able work, and founded on much study of Mr. Wright's Report and other documents, it proved less valuable than was expected. A lack of experience in affairs and practical statistics, as in the case of many young writers, gave occasion for serious errors, some of which I felt compelled, by the use that was being made of them, to point out in a letter to the New York *Evening Post* of July 2, 1891. It is probable that the author will make important corrections if this interesting monograph is republished. His main contention, that legislation has less restrictive power than many seem to think, is quite in accord with the facts.

CAUSES OF POVERTY.

The December number of the British *Economic Journal* contains a monograph on the "Causes of Poverty," by Miss Helen Dendy. This author bases her article upon the records of 152 families, which were not self-supporting, as shown by their application for charitable assistance. The period of her investigation covers both summer and winter months, and as the cases were chosen indiscriminately from a wide district containing over 126,000 people, and having nothing in common save their poverty, they can stand as representing the class of unemployed.

Miss Dendy's results are arranged in the following crude table, which she describes as "necessarily more or less imperfect and rough." But it may, perhaps, illustrate the nature of the unemployed — labor problem: —

I.		II.		III.	
Reckless improvidence,	5	Ordinary illness,	28	Decay of trade,	4
Crime,	4	Want of stock (periodical)	3	Extraordinary slackness,	3
Drink,	19	Old age unprovided for,	10	Emergency,	9
Idleness,	6	Ordinary slackness,	12	Extraordinary illness,	20
Desertion,	5		53	Incompetency,	21
Bad temper,	3				57
	42				

The cases represented by the first group cannot be prevented by any external means, and must necessarily exist in the present stage of civilization. Drink is the most potent cause of distress in this group. Idleness and drink often go hand in hand, but both are frequently found as distinct causes of poverty. Bad tempered people are generally out of employment because of their quarrelsome natures. The number of cases given as due to desertion (5) gives no adequate idea of this cause of distress, for such cases come directly under the poor laws. In none of the cases in the first group can poverty and distress be laid to lack of work.

In the second group "ordinary illness" includes only what every individual might reasonably expect, and for which provision might be made. "Want of stock" represents the cause of distress of a class of people who habitually consume both capital and profit, trusting to chance for help when it is needed. "Ordinary slackness" represents the normal amount "of out of work" in certain trades, but the laborers of this class are compensated by higher wages during the busy season. This should cause no distress (except, perhaps, when the slack season is longer than usual) were it not for the habit of spending money as soon as earned.

The amount of distress caused by "decay of trade" is small, for a competent man can adapt his skill to some similar form of industry. "Emergency" includes cases such as loss by fire or sudden death, which cannot be averted. Illness is "extraordinary" when no degree of thrift or foresight could maintain the family in independence. Consumption is the leading cause of distress in this class of cases. Finally,

we find people who are compelled to ask for aid, not because of any particular deficiency, but because of lack of ability. When once taught a trade, however, these people can generally find work; and here, no doubt, there is chance for charitable aid.

In this classification careful inquiry was made in each case. The necessary information was obtained from relatives, landlords, and employes.

G. N. CALKINS.

STATISTICAL ARTICLES IN GERMAN PERIODICALS AND JOURNALS.

Jahrbücher für Nationalsökonomie und Statistik. February, 1892.

Die Entwickelung der Briteschen Landwirthschaft unter dem Druck ausländischer Konkurrenz. By Prof. Dr. Paasche.

This traces the development of British agriculture since the abolition of the corn laws, and every page bristles with statistical evidence. Long rows of figures give the imports of each staple with the amounts shipped from each food-producing country. Other tables show the diversification of British agriculture itself. All this leads to the conclusion that the principal cost of cheap food for the inhabitants of Great Britain has been the burden of decreased rents falling upon the land-owners.

Die Verwaltung der Stadt Berlin in den Jahren 1882–1888. By E. Loening.

This presents a discussion of the recently published statistics of the Berlin city government. The city has continued in the line of development begun in 1860. The population has increased 3.46 per cent yearly,—an addition traceable both to immigration and to an excess of births over deaths. At the same time the basis for taxation has grown at an even more rapid rate; that is, the income return has increased 6.11 per cent annually. Not only have the tax receipts risen from 24,198,519 marks in 1882–83 to 33,461,753 marks in 1888–89, but also the surplus from the administration of the municipal monopolies from 31,382,626 marks to 44,767,393 marks in the same years, respectively.

One-fourth of the city's income was expended upon its schools, 15 per cent upon its streets and bridges, and a smaller proportion for

street lighting and cleaning, for poor relief, for police surveillance, for pensions, etc. The municipal gas and water works, the slaughter house, canals, markets, have all been more or less extended. Upon this huge municipal plant the total debt is 163,340,125 marks. The next problem to be dealt with, says Herr Loening, lies in the annexation of the various suburbs, which the rapid growth of Berlin has made practically at one with that city. Many economies are to be expected from such centralization.

Die Zunahme der Bevölkerung in den hauptsächlichsten Kulturstaaten während der letzten Dezennien. [March, 1892.

This is a table collecting, from official sources, the statistics of population of the chief civilized countries for the period during which they have been regularly gathered. The states compared are: the German Empire, Prussia, Bavaria, Saxony, Wurtemburg, Baden, the United States, France, Great Britain and Ireland, England and Wales, Scotland, Ireland, Sweden, Norway, Austria, Hungary, Holland, Belgium, Russia, Denmark, Italy, Spain, Switzerland, and Portugal. VICTOR ROSEWATER.

Schmoller's Jahrbuch. XVI. No. 1.

Der Wiener Weltpost Kongress. By J. Jung.

The congress of delegates from the various countries comprised within the universal postal union, which met in Vienna in 1891, furnishes occasion for a review of the growth and extent of the world's postal business. The suggestion made in 1868 by Minister Stephan, then in charge of the postal system of the North German Confederation, bore fruit in 1874, when a convention was signed in Bern by the representatives of 22 states, with some 350 million inhabitants. The new postal convention effected at Paris in 1878 bore the signatures of delegates from 32 states, with a population of about 750 million people. The union has since then become more and more complete, embracing in 1891 over 60 countries with 946 million inhabitants.

The postal traffic within the union has increased from, in round numbers, 3300 million transmissions in 1873 to 15,000 million in 1889, classified roughly into 7000 million letters, 1600 million postal cards, 5700 million pieces of printed matter, 100 million articles of merchandise, 220 million postal money orders, 260 million packages, 60 million registered letters, 40 million postal notices and pieces forwarded.

Detailed tables and charts are given, showing the increase in the internal and foreign postal business of Germany. Similar statistics for the whole postal union would be much more interesting and useful; we may hope that the next postal congress, which is to meet at Washington in 1897, will provide the missing material.

Die Entwickelung der Fachvereine in Frankreich 1891. By Dr. M. v. d. Osten.

Dr. von der Osten gives the following table from the *Annuaire dès Syndicats Professionels*, as illustrating the rapid increase of trades unions in France, since the law of 1884 legalized such combinations.

On July 1.	Unions of Employers.	Unions of Employes.	Unions with Mixed Membership.	Total.
1884	101	68	1	170
1885	285	221	4	510
1886	359	280	8	647
1887	598	501	45	1,144
1888	859	725	78	1,662
1889	877	821	69	1,767
1890	1,004	1,006	97	2,107
1891	1,127	1,250	126	2,503

On the 1st of July, 1891, the number of members in the unions reported were 106,157 employers, 205,152 employes, and 15,773 members of mixed unions. The list of objects for which their activities are exerted include funds for sickness, injury, temporary lack of employment, trade schools, libraries, and employment bureaus.

VICTOR ROSEWATER.

Allgemeines Statistisches Archiv. II. No. 1.

Die Jahresschwankungen in der Häufigkeit verschiedener bevölkerungs und moralstatistischer Erscheinungen. By Dr. K. Becker.

This most interesting paper, originally read as an address before one of the scientific societies of Berlin, deals with the statistical phenomena recurring regularly each year, as illustrated particularly by the materials gathered by the German imperial statistical bureau. While in many cases such variations are ultimately dependent upon changes in season and temperature, yet the causation is seldom as direct as in the appearance of sunstroke, or death by freezing. One of the important factors is seen in the semi-annual terms upon which

houses are rented. The announcements of removal of residence in Berlin rise above the monthly average only in October and April. In these months not only is the weather unusually favorable, but also better opportunities are offered for securing new quarters.

In like manner the statistics of emigration to foreign lands display two annual periods of extraordinary activity. The maximum comes in April, then a decrease until July, after which the increase again continues to October. Dr. Becker, in order to reduce these variations to a scientific basis, treats his figures in this way: After finding how many such events would occur each month if they were evenly distributed throughout the year, he takes the result as 100 upon his scale, and then expresses the number which actually did occur in each particular month in figures relative to this norm. Thus calculated, the statistics of emigration for the years 1872–89 become, according to the time of sailing, January, 26; February, 52; March, 132; April, 207; May, 173; June, 105; July, 80; August, 93; September, 105; October, 126; November, 73; and December, 28.

Similarly calculated, statistics of marriage for the years 1872–85 give more frequent variations. The figures are: December, 76; January, 97; February, 118; March, 58; April, 115; May, 124; June, 91; July, 84; August, 68; September, 92; October, 112; November, 153. Here, besides the seasons, the terms of house rents, of employment contracts, and the church festivals exercise noticeable influence. Reduced to a chart, we have a line rising and sinking three successive times, and this curve resembles those for the separate commonwealths of the empire, although differing slightly from those for other European countries.

The influence of the marriage curve upon that for the total number of births is almost imperceptible. Throwing the date of birth back nine months, in order to get the time of conception, Dr. Becker arrives at these results for the German Empire on the averages of 1872–85: January, 100; February, 99; March, 99; April, 102½; May, 105⅓; June, 103½; July, 100; August, 97; September, 95; October, 95⅔; November, 98; December, 105. Thus, the curve swells twice annually. The statistics of conceptions leading to births of illegitimate children, on the other hand, form a curve with but one annual swell, the maximum occurring in May and far above either maximum for the total births. From this Dr. Becker concludes that the seasons have much more direct influence upon births of illegiti-

mate than of legitimate children. Very different is the curve of the still-born. It rises and sinks but once annually, but the height falls in the cold month of January, and the depth in moderate September.

Upon the general death rate, too, may be traced the influence of wintry cold and summer heat. The two maximums come in March (110) and August (101), respectively, and the two minimums in October (91) and June (95). The greatest deviations from the average appear in the cases of infant death. A similarly constructed curve for the phenomena of suicide shows one huge swell from 70 in December to 126 in June, the maximum in the summer when the day is longest, not in the winter as might have been expected.

Like annual variations in the statistics of crimes of every sort are dealt with and illustrated by graphical charts, showing the resulting curves. VICTOR ROSEWATER.

Zeitschrift für Schweizerische Statistik. XXVII. No. 3.

Zehn Basler Arbeiterhaushaltungen. By Carl Landolt.

The wages question continues to attract attention in all parts of the civilized world. We have here a new investigation for Switzerland, chiefly on the side of workingmen's budgets. The method pursued is interesting. Herr Landolt began his study in November, 1888, when he persuaded three reliable laborers to conduct household accounts according to prescribed rules. One was soon forced to choose between giving up his bookkeeping and giving up his situation; nor did the work of the others proceed satisfactorily. The *Basler Arbeiterbund* was therefore appealed to, and with its assistance eighty members were induced to participate in the scheme. They were required, first of all, to take an inventory of their entire property, and then to meet regularly from time to time for inspection and correction of accounts. The number of laborers who persisted in the undertaking gradually fell off to seventeen, and Herr Landolt finally secured fifteen reliable accounts covering a period of one year. Owing to lack of time, only ten of these have been compiled. The books give a chronological record of income and expenditure with the exact quantities of every purchased article. Unaccounted expenditure was so controlled by means of semi-monthly or monthly balances that this item, usually quite large, was reduced to an average of 9 per mill of the total expenditure. This adds greatly to the reliability and accuracy of the resulting computations.

The ten families under consideration comprise fifty-four members, of whom twenty-three are wholly or in part self-sustaining, and occupied mostly with work requiring some small degree of skill. The wife, in eight out of ten instances, is engaged in remunerative employment. The family is made up, on the average, of two adults and three minors. Their dwellings are not what would be desired, failing generally to afford sufficient air space per person. As a result of this, the health of the occupants is more or less affected, though not at all bad considering the circumstances. The inventory of property is closely connected with the earning capacity of the family. Herr Landolt has classified two households as very poor, three as poor, three as moderate, and two as comparatively well-fixed.

The average total annual income per family was 1825.71 francs. Of this the average earnings of the husband constitute 73.8 per cent; of the wife, 10.8 per cent; of the children, 6 per cent, while 9.4 per cent is obtained from other sources. While the average cash on hand at the commencement of the account was 68.7 francs, only 58 francs remained at the end. The laborers, with one exception, were not able to save anything, much less to be able to make adequate provision for the future. Any slight emergency might bring them within the bounds of pauperism. VICTOR ROSEWATER.

Vierteljahrshefte zur Statistik des Deutschen Reichs. Herausgegeben vom Kaiserlichen Statistischen Amt. Erster Jahrgang, 1892. Erster Heft. Berlin, 1892.

This new publication will deal with such subjects as indirect taxes, on beer, brandy, salt, playing cards, tobacco, sugar; coal, iron, and salt production; the crops; births, marriages, and deaths; emigration; it will also give selections from annual returns on special matters, like foreign commerce, foreign and domestic shipping, criminal and insurance statistics; and, finally, it will tabulate the more infrequent reports,— the census, the votes at elections to the Reichstag, and the like. It is possible to call attention to only a portion of the contents of the present number.

The census of December 1, 1890, is summarized, showing that the population of the Empire was then 49,428,470; the percentage of gain annually from 1885 to 1890 was about the same as prevailed from 1871 to 1880, being a marked improvement over the period 1880–85, when emigration was unusually large. The marriage rate

has increased a trifle during the past ten years, whereas the birth and death rates have slightly diminished. There is a suggestive table comparing, for the years 1884 to 1890, the movement of population in the German Empire, France, Great Britain, Ireland, and Italy. The emigration statistics for 1891 are not quite complete, the number of Germans sailing from French ports is lacking; but reckoning these at the nearly constant average from such ports for the preceding four years, the total emigration from Germany during 1891 was rising 120,000,— 23,000 more than in 1890, and the largest number since 1884. The usual proportion of about 90 per cent came to the United States.

German shipping has made great advances in the last decade, though the number of sailing vessels between 1880 and 1891 was reduced from 4403 to 2757, and the tonnage from 974,943 to 709,761. The steamships, on the other hand, increased from 374 to 896, and their tonnage from 196,343 to 723,652. In 1891 one-half the total tonnage was under steam; in 1880 only one-sixth. It is noticeable that the main increase in tonnage is in the larger ships, especially in those of more than 2000 tons. C. F. A. Currier.

Statistische Monatschrift. Vienna, January, 1892.

Die überseeische österreichische Auswanderung, insbesondere in den Jahren 1889 und 1890. By Dr. Friedrich Probst.

Dr. Probst treats his subject from two points of view, namely, the returns of emigration from European ports and of immigration into foreign lands. Figures from the first-mentioned sources give a total of 55,667 emigrants from Austria-Hungary in 1889, and 74,002 in 1890. But, inasmuch as the returns are notoriously incomplete, these results fall somewhat short of the actual facts. Two-thirds of the emigrants recorded are males, 20 per cent under 15 years of age, and about 10 per cent over 40 years of age. In the year 1890, this emigration neutralized 22 per cent of the natural increase of population by excess of births over deaths.

Similar figures are given for the immigration from Austria-Hungary into various states of North and South America; these, however, are necessarily fragmentary. Dr. Probst emphasizes the difficulties and disadvantages which attend the emigrant wherever he goes, and insists that of the 30 to 40 thousand people who leave Austria-Hungary for foreign shores annually not more than 10 thousand have their expec-

tations even half-way realized, while 20 to 30 thousand are compelled to eke out the remainder of their existence in a most pitiful manner. State interference is the remedy recommended.

Die gewerbliche Genossenschaften in Oesterreich zu Ende des Jahres 1891. By Dr. Schmid.

This paper shows statistically the condition and extent of industrial societies in the Austrian kingdom. In 1883 the total number was 2870; in 1890, 5113, of which 722 were unions for particular trades, 2252 unions for groups of allied trades, and 2139 unions for the combined trades of a specific locality. Of these societies 2857 possessed funds for mutual aid, 2657 had arbitration committees, 808 kept general sickness funds, and 195 had funds for the aid of sick apprentices. The 722 simple trades unions comprised 112 different industrial occupations.

Mittheilungen des Statistischen Amts der Stadt Dresden.
Wochen-Berichte des Statistischen Amts der Stadt Dresden.
Monatsberichte des Statistischen Amts der Stadt Dresden.

In January, 1891, the city of Dresden, Germany, began the publication of occasional, weekly, and monthly statistical reports. The weekly reports embrace such subjects as marriages, births, deaths, the gas and water supply, slaughter-house returns, an exhaustive list of market prices, the weather, etc. The monthly publication summarizes the vital statistics and also those pertaining to the consumption of gas and water, but is devoted chiefly to information not otherwise supplied, such as criminal and other police returns, reports from hospitals and other charitable organizations, movement of the population, the amount of building going on, savings bank and loan operations, octroi receipts, and vacant dwellings classed according to rental. C.